

III—STUDIES IN THE LONGICORNIA OF NORTH AMERICA.

On rearranging the Cerambycids of my collection, it is noted that the major part of nearly all the larger genera is composed of material thrown together without sufficiently detailed study as a rule. An attempt is made in the following pages to separate the various units and subunits more carefully and on closer lines, in order to better portray what the evolutionary forces have so far accomplished. Some groups such as *Prionus* and *Tylosis* appear to be in a more plastic condition than others at the present time, including forms which though specific or subspecific according to criteria derivable from general comparative studies in the Coleoptera, are so connected by what might be interpreted to be intermediates, or depart so little from the common model, that it seems correct to assume them to be less well established than others and destined to speedy extinction in the struggle for existence; but it seems desirable to define these less accentuated forms as well as the others, in order to record what really exists at the present epoch of the earth's history. It is only by carefully recording such data that certain phases at least of the processes or laws of evolution can be finally deduced. It is quite possible that some species already described and recorded in our lists in this and other families, such as uniques remaining such for more than half a century for example, of which we can recall a number, are transitory forms of this kind that have appeared in comparatively few individuals and soon crowded out of existence by reason of changed environment or other uncongenial conditions. I think however that all the forms to which names are here attached, will prove to be at least subspecific and therefore worthy of definition and formal record.*

* All the species herein described as new inhabit the continent of North America, excepting *Zalophia spissicornis* and *Cyllene andesiana*, which form part of the fauna of Ecuador.

Family SPONDYLIDÆ.

Subfamily PARANDRINÆ.

Parandra Latr.

The species of this genus are numerous and widely distributed but in many cases are difficult to discriminate. There seem to be three specific American forms included in the material before me, not including *polita* Say, which I do not have at present, except in a series of six examples of the Central American form, named *cylindrica* Thoms., which is said by Horn to be identical with *polita*; it is very elongate, subdepressed and parallel; the other three species as represented by the male may be separated as follows:

Carina along the anterior face of the hind tibiæ much nearer the inner than the outer edge; eyes well developed, fully two-fifths as long as the median length of the head; color dark testaceous throughout. Body very stout, finely and sparsely punctate; head very wide, but little narrower than the prothorax, the mandibles arcuate, slightly shorter than the head; antennæ barely as long as the width of the latter; prothorax three-fourths wider than long, obtrapezoidal, about as wide as the elytra, the latter barely one-half longer than wide. Female more elongate than the male, with less transverse and more parallel prothorax and much smaller head and mandibles. Length (♂, ♀) 17.5-18.5 mm., width 6.3-6.6 mm. Indiana.

ampliceps n. sp.

Carina medial; eyes very much smaller, between a third and fourth as long as median line of the head.....2

2—Color dark piceous throughout, parallel, elongate, finely, sparsely punctate; head moderate, distinctly narrower than the prothorax, the mandibles more slender, arcuate, shorter than the head; antennæ much longer than the width of the latter; margin of the epistoma gradually and feebly anteriorly prominent medially and in the form of a broad cusp; prothorax but little more than one-half wider than long, obtrapezoidal; elytra three-fourths longer than wide. Length (♂) 15.2 mm.; width 4.6 mm. New York...**brunnea** Fabr.

Color pale brownish-testaceous throughout, very variable in size, stouter than *brunnea*, the antennæ not quite so long as the width of the head, the mandibles nearly as in the two preceding; epistomal margin abruptly dentiform at the middle; prothorax a little wider than the head, two-thirds to three-fourths wider than long, obtrapezoidal; elytra two-thirds longer than wide. Female differing as in the female of *ampliceps*. Length (♂, ♀) 9.4-16.8 mm.; width 3.0-5.6 mm. Pennsylvania and westward. Abundant.

gravidula n. sp.

In addition to these more definite forms, there are two specimens at hand that are aberrant; one, a female, exactly like the ordinary

female of *gravidula* but with two broad basal furrows on the occiput, separated by one-half the width of the latter and slightly diverging from the base, not extending quite to the posterior line of the eyes and with the elytral punctures nearly twice as numerous as in any other example; the occipital furrows may be a malformation, in which case there would be insufficient ground for naming it. The other specimen is a large stout female, nearly black in color throughout, otherwise nearly like the female of *ampliceps*, except that the head is a little smaller, the prothorax more transverse and the elytra longer. I have placed it with *brunnea* for the present. The above measurements exclude the mandibles.

The following is probably different from *glabra* Degeer, with which Mr. Bates may have placed his material from a near-by locality:

**Parandra obsolescens* n. sp.—Stout, parallel, moderately convex, highly polished, impunctate and pale brownish-testaceous in color throughout; eyes well developed, moderately convex; prothorax two-thirds wider than long, the sides straight and parallel, with fine reflexed margin before the middle to the obtuse apical angles, then broadly, circularly rounding, with wider concave margin around the basal angles to the median truncature, which is a little more than half the total width; elytra parallel, circularly rounded conjointly at apex, as wide as the prothorax and three-fourths longer than wide; carina of the hind tibiæ near the inner edge. Length (♀) 26.0 mm.; width 8.2 mm. Costa Rica (Chiriqui).

The antennæ are of somewhat different structure from those of the three American species described above, the depressed sensitive grooves not being narrow and well separated but broader, shallower and coming together on the under edge of the joints along a fine and entire carina. Under careful observation with good optical power, the remains of punctuation may be traced throughout the body in the form of excessively fine, sparse and feeble points. The coarse deep longitudinal groove at each side of the front, does not quite attain the apical margin at the base of the mandibles. From what is said of *glabra* by Bates, it would seem that it is always punctate, for he speaks of varying degrees of punctuation; the present form is impunctate within the ordinary meaning of that term, but at the same time *obsolescens* may prove to be no better than a subspecies.

Subfamily SPONDYLINÆ.

Spondylis Fabr.

The species of this genus, while strikingly uniform in general appearance, prove to be rather numerous and amply well defined. *Upiformis* Mann., and *laticeps* Lec., the former from southern Alaska and the latter from Lake Superior, are both unknown to me but are undoubtedly distinct from any of the five here described; *upiformis* is rather small and slender, the type being 13 by 4.5 mm. in size, which is all the useful information derivable from the original diagnosis, while *laticeps* is unusually large, with the head as wide as the prothorax, the latter subcarinate medially; the length of the type is 18.7 mm. The body is a little stouter and larger in the female than in the male, with distinctly smaller head and slightly shorter antennæ, but differs very little otherwise. The range of the genus is from the palæarctic faunal regions, through the western parts of subarctic North America; it does not occur in the American Atlantic regions. The western and Sonoran species in my collection may be known as follows from the male except in *basalis*:

- Sides of the prothorax oblique basally but not or scarcely at all sinuate, the base never notably prolonged or subtubulate; anterior parts only a little narrower than the elytra.....2
- Sides of the prothorax becoming sinuate basally, the basal part prolonged and notably subtubulate; anterior parts much narrower than the elytra.6
- 2—Antennæ longer, extending distinctly beyond the base of the elytra..3
- Antennæ notably short, not extending beyond the elytral base.....5
- 3—Prothorax bi-impressed on the disk and with a sharply defined and subprominent median impunctate line, not quite attaining the apex. Body stout, moderately shining and black, nearly glabrous above, the under surface with short and moderately close, fuscous and inconspicuous hairs; head just visibly narrower than the prothorax, strongly, closely punctate, less strongly and very sparsely toward base, the median line not modified, except finely and feebly impressed, obsolescently so basally; basal joint of the antennæ arcuately subcylindric; prothorax transverse, one-half wider than long, widest and broadly rounded at the sides well before the middle, the impressions shallow, irregular, symmetrically placed; elytra parallel, obtuse at apex, three-fifths longer than wide, less coarsely punctate than usual, the punctures very dense, the two inner discal lines strong, the outer fine and feeble; metasternal impression large, rounded, the polished bottom of the impression broadly fusiform. Length 16.0 mm.; width 5.6 mm. Utah. Female wanting.

collaris n. sp.

Prothorax not so short and without trace of impressions or in any way modified median line, the basal joint of the antennæ stouter and more rounded. 4

4—Form stout, dullish black; pubescence of the front, mandibles and entire under surface coarse, yellowish and conspicuous, rather dense beneath; head slightly narrower than the prothorax, densely and strongly punctured throughout, more coarsely on the median parts of the vertex than elsewhere and with a shining irregular unimpressed and punctureless median line from the line of the eyes to the base; prothorax nearly two-fifths wider than long, the outline as in the preceding, the surface even, the punctures not so large as those of the head and much shallower, moderately close, somewhat uneven in distribution; elytra a fifth wider than the prothorax, nearly as in the preceding but less finely, less closely and more vermicularly punctate and with the raised lines feebler; metasternal impression shallower, with a fine and impunctate medial subcariniform line throughout. Length 17.0 mm.; width 5.8 mm. Washington State. Female wanting. **robustula** n. sp.

Form less stout, more elongate, more shining and deeper black as a rule, the yellowish-cinereous pubescence of the head and mandibles abundant, that of the under surface long, close, longer but finer than in *robustula*; head coarsely, deeply, very densely punctate throughout, much smaller than in the preceding and distinctly narrower than the prothorax, the median line not modified; prothorax much longer, not quite a fourth wider than long, widest and more strongly rounded at the sides nearer the apex; surface even, the punctures not so large or dense as those of the head, irregular in distribution, deeper than in *robustula*; elytra a fourth wider than the prothorax, nearly three-fourths longer than wide, subevenly, deeply, very closely and moderately coarsely punctured; two raised lines on each distinct, the outer obsolescent; metasternum nearly as in the preceding, except that the impression is less diffused, smaller and deeper, the fine smooth dividing line similar. Female stouter, with coarser sculpture and much less distinct elytral lines than in the male. Length 14.0–16.5 mm.; width 4.8–5.9 mm. California. **subpubescens** n. sp.

5—Body narrow, much more elongate than in any of the preceding, still more shining than in *subpubescens* and similarly very deep black; pubescence sparse above, short and moderately abundant beneath, everywhere dusky and inconspicuous; head very nearly as wide as the prothorax, the punctures moderately coarse, dense anteriorly, slightly coarser and widely scattered from before the middle to the base, the median line not modified; antennæ thick, joints 8–10 on the compressed sides but just visibly longer than wide; prothorax long, between a fourth and fifth wider than long, widest and with broadly rounded and subparallel sides anteriorly, the base relatively more narrowed than usual, the sides just before the basal margin just visibly subsinuate, strongly, irregularly punctate, the median line broadly impunctate basally; elytra nearly a third wider than the prothorax, three-fourths longer than wide, densely punctured, the two inner

raised lines rather strong; metasternal impression smaller than usual. Female very much larger, more coarsely sculptured and stouter than the male, almost similarly proportioned, except that the head is smaller and that the antennæ extend only to basal third of the prothorax. Length (σ^7) 13.0-16.0, (♀) 17.0 mm.; width (σ^7) 3.9-4.8, (♀) 5.6 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend.

**erebea* n. sp.

- 6—Not very deep black and somewhat dull in lustre, the pubescence largely denuded in the type but apparently coarse, yellowish-cinereous and abundant beneath; head two-thirds as wide as the prothorax, the punctures moderately strong, everywhere evenly distributed and well separated, the median line striiform on the front only; antennæ very short, but little longer than the width of the prothorax, the fifth joint as wide as long; prothorax barely at all wider than long, the sides parallel and nearly straight in apical half, rounding slightly at apex, rather abruptly converging thence posteriorly, becoming sinuate to the tubulate base; punctures not very coarse, widely separated, becoming still smaller and notably closer medially, the median line unmodified; elytra three-fifths longer than wide, fully two-fifths wider than the prothorax, deeply but not very coarsely punctate, the punctures coalescent irregularly, leaving broad flat irregular interspaces, which are dull in lustre, also a flat and finely punctulate sutural margin, the raised lines obsolete, the innermost alone evident though not elevated; metasternal impression unusually large, elongate and deep, its median line finely cariniform. Length 16.0 mm.; width 5.3 mm. Male unknown. Washington State.....*basalis* n. sp.

Because of the multiplicity of species in North America, these, including *mexicana* of Bates, amounting so far as already known to eight, it is probable that the genus *Spondylis* originated in North America and extended to Eurasia in mid-Tertiary times by way of the Alaska-Siberia land connection.

I agree with LeConte that the position of *Spondylis*, near *Parandra* in a distinct family group, is far more rational than as a member of the Cerambycid series near *Asemum*, where it is placed by Bates; it is correctly placed in the recent European catalogue near *Parandra*, but in a simple tribal group of the Cerambycidae, which is indefensible. Some other of the aberrant Cerambycids of Lacordaire should also form distinct families of the Longicornia, such for example as *Hypocephalus*.

Family CERAMBYCIDÆ.

Subfamily PRIONINÆ.

Trichocnemis Lec.

This genus is distinct from *Ergates* and should be restored. The last joint of the maxillary palpi in *Ergates* is oval and more narrowly truncate at apex, while in *Trichocnemis* it is of a wholly different form, being broadly obtriangular, the sides straight and widely flaring from base to the truncate apex. In the former there is a prominent lateral spiniform tooth at basal third of the prothorax, wanting in the latter, and there are numerous other incongruities. The two genera are related tribally but are unquestionably distinct.

Trichocnemis neomexicana Csy., is a different species from *spiculata* Lec. The name *Ergates marmoratus*, though not appearing in the Zoological Record for 1890, was published for this species by Prof. T. D. A. Cockerell, but no diagnostic characters were given beyond the marmoration of the elytra, and, as there is no evidence that this may not occur occasionally in *spiculata*, it would seem that the application of the name *marmorata* is to some degree ambiguous and therefore in the nature of a *nomen in litteris*. The two names were published simultaneously so far as determinable from the record as I recall it now, and weighing all the evidence, it would seem that *neomexicana* is that which should prevail.

Tribe MALLODONTINI.

A general consistency of facies runs through the moderately numerous genera of this tribe, which, so far as known to me, may be defined briefly as follows:

- Mandibles differing sexually, horizontal, more or less elongate and generally densely pubescent within in the males, small, arcuate and less pubescent in the female; body more or less depressed. 2
- Mandibles similar in the sexes and deflexed, not pubescent within, the pronotal sculpture also nearly similar in the sexes, the body notably convex. 5
- 2—Posterior angles of the prothorax broadly oblique to the ante-basal tooth, not toothed at the basal margin; pronotum differing in the sexes, densely and finely punctured with polished and sharply limited impunctate areas in the male, smooth medially, more steeply declivous and roughly sculptured at the sides in the female; mandibles in the male long, very densely pilose within. . . . **Malldon**

- Posterior angles of the prothorax obliquely sinuate, dentate at base as well as before the base; pronotum of the male not differing much from the female and without sharply defined smooth areas. 3
- 3—Inner margin of the met-episterna broadly sinuate throughout, mandibles much elongated in the male but less densely pilose within than in *Mallodon*. **Notropheurus**
- Inner margin of the met-episterna straight, the latter subparallel, with the sides not at all sinuate. 4
- 4—Mandibles very elongate in the male, the internal fringe of hairs less dense than in *Mallodon*, the maxillary palpi with a few stiff hairs; prosternum carinate except anteriorly: **Stenodontes**
- Mandibles not so elongate or widely separated in the male, irregular, tridentate and densely pilose within, the two submedian teeth united; maxillary palpi with regular marginal fringes of short hairs; prosternum not carinate. ***Aplagiognathus**
- 5—Prothorax at the sides and base nearly as in *Mallodon*, rounded at the base and with only an ante-basal tooth; tarsi widely dilated; prosternum not carinate. **Paramallus**

These genera, with the exception of *Mallodon*, are exclusively American and some of them, such as *Stenodontes*, rather restricted in habitat; they differ a good deal among themselves in general habitus, *Paramallus*, for example, with its very convex body and short pendant mandibles, being very different in appearance from *Mallodon*, with which LeConte united our representative species.

Mallodon Serv.

Besides the common *dasystoma* Say, my cabinet includes the two following species, represented at present only by the female:

Mallodon debile n. sp.—Female narrow, moderately convex, shining, castaneous; head very coarsely, deeply, irregularly foveato-punctate, with a fine striiform median line; antennæ piceo-castaneous, short, the first six joints extending barely to the base of the prothorax, the third joint twice as long as wide, the fifth but little longer; prothorax as in *dasystoma* but shorter and with the sides converging much more from base to apex, differing also in having the inner lateral ridge wholly obsolete; elytra four-fifths longer than wide, more convex than in *dasystoma* and differing in being ogivally narrowed behind from a little behind the middle, the combined apices very narrowly parabolic, finely, sparsely and obsoletely punctulate. Length 28.0 mm.; width 9.3 mm. Alabama.

Differs from the female of *dasystoma* in its narrower and more convex form, shorter antennæ, with shorter and less basally narrowed first joint, and in the form of the posterior parts of the elytra, but most decisively in the form of the fifth ventral segment, which in that species, is between three and four times as wide as long,

broadly rounded, with the apex in about a third the total width, becoming gradually transverse and fimbriate; in *debile* the fifth segment is only twice as wide as long, evenly trapezoidal in form, the rectilinearly truncate apex rather more than half the basal width and fimbriate with shorter hairs.

**Mallodon baroni* n. sp.—Female more elongate and parallel than the same sex of *dasystoma*, black, the elytra and entire hind body pale brownish-rufous, shining; head nearly as in *debile*; antennæ a little longer, extending to basal two-fifths of the elytra, the third joint much more than twice as long as wide; prothorax similar in general form, with the sides anteriorly converging and feebly arcuate throughout but less transverse, the lateral spines a little longer and that nearest the base more prominent; surface with a large minutely, sparsely punctate swelling at each side anteriorly from a little behind the middle, the intervening concavity strongly and loosely punctate and with a few coarser punctures on the posterior slopes of the swellings; laterally the surface is declivous, coarsely, densely punctato-rugose and duller, with an inner fine shining ridge and another, more lateral and oblique, from slightly before to slightly behind the middle; elytra a little more than twice as long as wide, a fourth wider than the prothorax, the sides parallel, very feebly arcuate and just visibly converging from well behind the middle to the obtuse apices, dehiscent in nearly apical half, the sutural spines well developed, very aciculate; surface obsolete rugulose, with a broad shallow impression near each side from well behind the humeri, evanescent apically. Length 35.0 mm.; width 11.8 mm. Mexico (Guerrero),—Baron.

The type differs from the female of *dasystoma* in its narrower form, structure of the pronotum, coloration and in the form of the fifth ventral, which is here similarly transverse and broadly rounded, but with the apex becoming medially sinuate in about half the total width. *Spinibarbe* and *molarium* are much larger species, and it would seem not to be identical with *angustatum* Thoms., as the genæ are said by Bates to be obtusely tridentate in that species; in *baroni* the genæ are strongly and sharply angulate medially, with the angles at the base of the large angle, and forming the anterior limit of the nearly parallel sides of the genæ, only very slightly and obtusely prominent; so the language "obtusely tridentate" could not very well be construed to apply. The triangular median tooth at the apex of the genæ is relatively much larger than in either *dasystoma* or *debile*.

Nothopleurus Lac.

This genus is adopted by Bates, and apparently with ample justification, though rejected by LeConte. Three species are cited by the former author as composing the genus so far as known, of which *mandibularis* Harold, (= *gnatho* || Lec. and *dentiger* Cr.,—catalogue name) now stands in our lists under the genus *Malldon*; the other species are the type, named *cbevinus* by Lacordaire, and *gnatho* White.

Stenodontes Serv.

The species of this genus are of large size, subdepressed form and strongly of the *Malldon* type in general facies, but the mandibles are always acutely unidentate near the base internally, with the internal fringe less dense, the sides of the prothorax obliquely sinuate at base and denticulate at the extreme base as well as more anteriorly, with the surface subsimilar in the sexes and without the sharply defined male mirror-like areas of *Malldon*, and, finally, the prosternum is carinate posteriorly, a character unknown in *Malldon*. *Stenodontes* is exclusively West Indian in habitat. I have a considerable series from Cuba and one apparently collected in extreme southern Florida and recognize three very obvious species, of which the largest is apparently *chevrolati* Gahan., the male being 59 mm. in length, excluding the mandibles, which are 13 mm. long and the female 52 mm.; the male antennæ only extend to slightly behind the middle of the elytra, becoming rufescent, and are not almost as long as the body as stated of *damicornis* by Lacordaire. The two other species seem to be undescribed and may be known as follows:

****Stenodontes cubensis*** n. sp.—Male oblong-oval, broad, very moderately convex, polished and black throughout, the tarsi pisciscent; head moderate, not closely, very irregularly punctate, coarsely across the vertex and more remotely thence to the base, finely on the epistoma and almost punctureless elsewhere, the median line broadly impressed except basally; antennæ very slender, extending to apical third of the elytra, black throughout, the apical joint about as long as the distance between the eyes; prothorax nearly as in *chevrolati* but relatively much smaller, shining, feebly and irregularly punctulate and uneven, being broadly convex sublaterally in apical two-thirds, with a depression behind the convexity, the sides steeply sloping and densely, coarsely punctato-rugose, with a shining ridge near the median elevated part, and between this and the sides, a very irregular elongate smooth spot, the margin with

short dentiform serrulation; elytra nearly two-thirds longer than wide, widest just before the middle, where they are fully a third wider than the prothorax, the sides converging behind the middle to the obtuse apices; surface smooth and almost punctureless, the sutural spines small. Female narrower than the male, with relatively still smaller head and prothorax, the usual small mandibles and longer elytra, the antennæ extending to the middle of the latter, which are twice as long as wide. Length (exclusive of the mandibles) (♂) 34.0-47.0, (♀) 41.0 mm.; width (♂) 13.6-19.3, (♀) 15.7 mm.; length of mandibles (♂) 4-8 mm. Cuba (Guantanamo and Havana),—Baker.

Differs in the male from *chevrolati* in the relatively much smaller head and prothorax, the latter in *chevrolati* being very nearly as wide as the elytra, and the mandibles are shorter, being barely as long as the prothorax in an apparently well developed male and more abruptly arcuate inwardly at apex; also in the more slender antennæ, the last joint in *chevrolati* being scarcely more than half as long as the width of the interocular surface. In the female the two species differ even more strikingly in ways similar to those relating to the males.

Stenodontes parallelus n. sp.—Male more parallel than in either *chevrolati* or *cubensis*, shining, the head blackish; prothorax blackish-castaneous, the elytra still paler and brownish-rufous; head sculptured nearly as in *cubensis* but with the coarse punctures across the vertex more confluent in a few depressed spots, those of the epistoma very fine and much more remote; antennæ dark red-brown, the basal joint more obscure, extending beyond the middle of the elytra, more tapering than in either of the preceding, becoming very slender apically; prothorax nearly as in *cubensis* but relatively larger and more transverse, a little more than twice as wide as long, the short dentition of the margins still feebler, very irregular and more like crenulation, the two spines limiting the posterior sinus distinct; elytra but very little wider than the prothorax, nearly two-thirds longer than wide, less narrowing behind the middle than in the two preceding, similarly sculptureless. Female wanting. Length (♂) 45.0 mm.; width 17.2 mm.; length of mandibles (♂) 7.0 mm. A single unlabeled example, probably from southern Florida.

Differs from *chevrolati* and *cubensis* in its more parallel form, more tapering antennæ and still more moderate mandibles, with the internal subbasal tooth not abruptly acute to subspiculiform as in those species, but broadly triangular; the small area of punctures behind each prominence of the pronotum is more densely and coarsely rugose; the head is in size and proportion much nearer *chevrolati* than *cubensis*. The Haitian *exsertus* Oliv. (*mandibularis*

Fabr.) I have not seen, but it probably does not occur in Cuba, most of the Coleopterous species of these two islands being different.

The subbasal internal mandibular tooth broadens out greatly in the shorter mandible of the less developed males, becomes more obtuse and occupies much more of the internal margin.

Aplagiognathus Thoms.

The chief characters of this genus as stated by Thomson (Ess. Class. Ceram., p. 320), are the moderate mandibles, which are subvertical in both sexes and the sides of the prothorax either multi-spinose or crenate and posteriorly dentate; some eight species were named by Lacordaire as belonging to the genus, or section of *Mallodon* as he preferred to regard it, forming a very heterogeneous mixture, beginning with *spinusus* Newm., which was adopted definitely as the type of *Aplagiognathus* by Thomson and including the female of *Mallodon dasystema* Say, as well as *melanopus*, *cilipes* and other notably dissimilar forms of more northern distribution.

In the "Biologia," Mr. Bates describes an *Aplagiognathus* in the sense of Thomson as indicated by his chosen type, under the name *hybostoma*, which he states is closely allied to *spinusus*, and the figure portrays mandibles, short to be sure, though apparently not subvertical at all but virtually horizontal, and they are described as being "rufo-hirtis." The species described below under the name *guatemalensis* also has short male mandibles, which are however perfectly horizontal, thus contradicting the very etymology of the name *Aplagiognathus*, densely rufo-pilose within and, though not so irregular in shape, are subsimilarly dentate on the inner margin; although deficient in lateral thoracic spinules, it appears to be an *Aplagiognathus* in the sense understood by Bates. This interpretation of *Aplagiognathus*, however, leaves *Mallodon melanopus* and allied species unassigned generically, for they have a very convex form of body, hind parts of the prothorax as in *Mallodon* and strongly deflexed small nude mandibles, altogether similar in the sexes and not at all like those figured by Bates as pertaining to *Aplagiognathus hybostoma* and still less those of *guatemalensis*. These species are certainly not *Mallodon*, being very different in structure and appearance; neither do they seem at all appropriately placed with *Aplagiognathus spinusus*, *hybo-*

stoma or *guatemalensis*, and I have therefore proposed for them the genus named *Paramallus* in the tabular statement give above.

**Aplagiognathus guatemalensis* n. sp.—Male elongate, parallel, feebly convex and shining, blackish-castaneous throughout in color, the legs and antennæ black with a slightly piceous tinge; head extremely coarsely and densely punctato-rugose throughout, coarsely rufo-pilose apically, furrowed along the middle, the antennæ about attaining basal third of the elytra, slender, the basal joint coarsely punctate internally, third and fourth joints about twice as long as wide; mandibles stout, coarsely, not densely punctate, not quite as long as the width of the interocular surface, the upper line having rather less slope than that of the vertex and front and straight, feebly swollen near base, the exterior outline from above nearly straight, rounding inward slightly at base, the apex abruptly inflexed, conically aciculate and smooth, the internal teeth three in number, obtuse, the two anterior completely fused together, the tip obtusely bifid, the internal erect hairs abundant, stiff and pale red-brown; prothorax nearly twice as wide as long, the sides parallel, feebly arcuate and with many uneven, small and obtuse dentelures, obliquely sinuate and bidentate at base; surface very coarsely, densely punctato-rugose but with two large oblique median convexities polished and nearly impunctate, and a similarly shining and sparsely punctate transverse area at base; side slopes moderate, with a short tumid smooth line medially near the shining convexities; apical margin broadly sinuate, becoming still more deeply sinuate at the middle; elytra scarcely at all wider than the prothorax, twice as long as wide, parallel and feebly arcuate at the sides, obtuse at apex, the sutural angles not at all dentate or spinose; surface nearly smooth, minutely, sparsely punctulate, feebly impressed sublaterally from near basal third, evanescently so apically; two fine and subelevated lines on each are barely evident; anterior tibiæ with the outer distal angle acutely prominent but at some distance from the tip; met-episterna broad, parallel; tarsi moderately dilated, the third joint much more coarsely papillose beneath than the two basal joints; fifth ventral transverse, broadly rounded and densely, rufously fringed, becoming sinuato-truncate medially. Length (exclusive of the mandibles) 45.0 mm.; width 15.3 mm. Guatemala (Esquintla).

It is not at all certain that this species can be clearly associated with *spinus* or *hybostoma*, because of the absence of the notably long, slender and aciculate spines along the lateral edges of the prothorax; but, if not, there is no other genus indicated in the "Biologia" that can receive it so far as discoverable.

Paramallus n. gen.

The type of this genus is the *Mallodon melanopus* Linn., of our lists. The reasons for separating it and its allies from *Aplagiognathus* have been given under that genus, and it requires only

the most casual observation to render evident the radical incongruity between these species and *Mallodon dasystema*. Even should my interpretation of *Aplagiognathus*, through *guatemalensis*, prove incorrect, it is not possible that *Mallodon melanopus* can be generically associated with *Aplagiognathus hybostoma*, and so, in any event, the genus *Paramallus* is necessary and valid. *Melanopus* inhabits the southern Atlantic regions, while *cilipes* Say, is confined to Texas and neighboring parts, and the two are by no means specifically the same, *cilipes* being narrower in build, with shorter prothorax, much denser internal tibial fringes and more slender antennæ. In the female of *melanopus* the prothorax is much shorter and more transverse, the antennæ notably shorter and the metasternal median line much less deeply grooved than in the male; the fifth ventral is almost similarly sinuato-truncate medially at apex in both sexes, but is relatively wider in the female and almost without any of the dense pale reddish terminal fringes of the male; in the male of *cilipes* the metasternal groove is deeper than in the male of *melanopus*.

Serrulatus Lec., also belongs to this genus and the following is allied to *serrulatus*, being more elongate and rather less convex than *melanopus* or *cilipes*. These four are the only species now known to me as properly assignable to *Paramallus*.

Paramallus arizonicus n. sp.—Female very elongate, nearly parallel, convex, shining, moderately pale red-brown in color throughout; head extremely coarsely, confluent punctato-rugose, more sparsely toward base and more finely and confluent behind the eyes, the front furrowed, the furrow becoming a deep stria behind the line of the eyes; mandibles short, thick, arcuate, nude and densely punctate internally, sparsely and more coarsely on the outer surface, the inner margin with a small sub-basal tooth and a short broad projection beyond the middle, sinuate at its apex; genæ broadly but sharply angulate; antennæ not quite extending to basal fourth of the elytra, rather thick, not tapering distally; prothorax rather more than twice as wide as long, the sides rounding, even and scarcely at all reflexed from base anteriorly to the acute tooth at basal fourth, thence very feebly converging and slightly arcuate, with numerous small and finely aciculate, spiniform teeth to the apex; surface but slightly undulated, smooth, polished and finely, sparsely punctate, wholly impunctate broadly along the middle, the sides steeply but not abruptly declivous in lateral fifth, the lower part of the slope coarsely and confusedly punctato-rugose, the upper sparsely and irregularly punctate, with a more coarsely sculptured line feebly evident near the summit; elytra about two and one-half times as long as wide, slightly widest at the middle,

where they are about a fourth wider than the prothorax, parallel, with feebly arcuate sides and conjointly broadly subparabolic apex, each rounding internally, with the sutural angle obtuse and barely at all denticulate; surface finely, obsoletely punctato-rugulose, with the two raised discal lines evident; median line of the metasternum fine and but feebly impressed; met-episterna broad and parallel; anterior tibiæ with the everted external distal angle spiniform and apical. Length 42.0-47.0 mm.; width 13.8-16.0 mm. Arizona,—Levette.

The male is not at hand, but the species differs from *serrulatus* Lec., in the stronger and denser sculpture of the head, paler coloration and in having the serrulation of the sides of the prothorax composed of small but extremely acute spiniform teeth and not more nearly in the nature of crenulation, as it is in *serrulatus*. The length of *serrulatus* is given by Leconte as 2.3 inches or 57.5 mm.

Of the Mexican *Mallodonopsis corrosa* Bates, I have a single male example from Natá, Panama; it is apparently smaller than any known to the describer, being only 25 mm. in length and the elytra, having the three broad abbreviated furrows on each very distinct, are rather coarsely though shallowly and not closely punctate, scarcely "punctulate" as stated of the more typical *corrosa*. *Mallodonopsis* is placed in a different group from *Mallodon* and allies by Lacordaire, though differing principally in some rather inconstant crural characters.

Callipogon senex Dup., is before me in a good series of three males and four females, sent by Wittkügel and collected in Honduras. The most conspicuous variation among the males is in the form of the scutellum, which, in the large and fully developed examples, is very transverse; in a smaller specimen with short mandibles, the scutellum is barely wider than long. In the female there is some variation in sculpture, the elytra being smooth and dull in one example, but there is still more variety in the degree of narrowing of the prothorax from the post-medial angle to the apex, this being very pronounced in the example with smooth elytra. On the plate accompanying Nonfried's article on *Callipogon* (Berl. Ent. Zeit., 1892, p. 17 et seq.), a most remarkable mistake seems to have occurred, one in fact of extremely grotesque nature; for the head of his type of *friedländeri*, having become detached from the body had evidently been gummed in place upside down, and is not

only so figured but referred to in the text as an apparently natural phenomenon, making of *friedländeri* a very isolated species!*

Tribe DEROBRACHINI.

Orthosoma Serv.

The genus *Orthosoma* was widely separated from *Derobrachus* and placed in a different section of the Prioninæ by Lacordaire, but it is apparent that LeConte was more nearly correct in placing them together in this tribe, for Lacordaire himself admits that *Orthosoma* makes an exception among the genera with which it was associated, in the form of the met-episternum, this being as in *Derobrachus*. Our material in the genus has never been critically examined and it seems evident that we have more than a single species, however great the prevailing variability. The three forms in my collection which appear to be worthy of names may be outlined as follows from the female:

Middle coxæ much more widely separated than the anterior; third antennal joint much longer than the fourth.....2

Middle and anterior coxæ equally separated; elytra decidedly less elongate; third antennal joint but little longer than the fourth.....3

2—Elytra fully two and one-half times as long as wide, parallel, with nearly straight sides, two-fifths wider than the prothorax, the latter short, very much more than twice as wide as long; eyes separated by but little more than half their own width; antennæ but just visibly tapering from the second joint. Male nearly similar but smaller, with the head small, the sides of the prothorax between the two anterior spines even or with a feeble obtuse projection. Length (♂) 26.0–30.0, (♀) 38.0 mm.; width (♂) 8.0–9.0, (♀) 11.7 mm. North-eastern America.....**brunnea** Forst.

Elytra feebly dilated, parallel but with arcuate sides, scarcely more than twice as long as wide, widest rather behind the middle, where they are three-fourths wider than the prothorax, the latter less abbreviated, barely more than twice as wide as long; eyes separated by three-fifths their own width; antennæ much more tapering from the second joint, relatively much more slender distally. Male stouter than the male of *brunnea* but of nearly similar parallel and linear form, except that the head is relatively much larger and the sides of the prothorax, between the two anterior spines, have from one to three posteriorly oblique irregular and very acute spinules; fifth

* It may be that this matter is intended to be some sort of individual thrust at Mr. Friedländer, as it is difficult indeed to conceive of it as a serious scientific conclusion. The injection of personal feeling into zoological nomenclature is, however, an abhorrent idea that was roundly denounced by LeConte (Tr. Ann. Ent. Soc., 1874, p. 84) in alluding to the name "*staff*," imposed by Schauffuss on a species of *Pleocoma*.

ventral feebly sinuate medially at apex. Length (σ^7) 33.0, (♀) 39.0 mm.; width (σ^7) 10.0, (♀) 14.5 mm. Indiana,—Levette.

amplians n. sp.

- 3—Form more nearly as in the female of *amplians*, the elytra dilated, somewhat inflated and widest behind the middle, where they are two-thirds wider than the prothorax, scarcely twice as long as wide; prothorax narrower and less transverse than in *brunnea*, slightly more than twice as wide as long; head small, the eyes separated by three-fifths their width; antennæ sensibly tapering, relatively longer than in either of the preceding, extending fully to the middle of the elytra, the surface of the body more shining and less densely punctured. Male unknown. Length (♀) 34.0 mm.; width 11.8 mm. Long Island (Willetts Point).....**spadix** n. sp.

The exact taxonomic relationship of these forms can only be determined by comparing large series, but they now seem to be specifically distinct. The numerous synonyms belong wholly to the very elongate and rectilinear form, described above as *brunnea*.

Tragosoma spiculum Csy., which is given as a synonym in the Henshaw list, is a species so distinct from any other that it could not fail to be instantly recognized; it does not resemble *harrisi* in any way, except in the general characters of the genus.

Tribe PRIONINI.

Our American genera of the tribe Prionini, as defined by LeConte, may be distinguished as follows:

- Antennæ having the outer joints sculptured with a longitudinal reticulation of anastomosing raised lines, stout and imbricate (σ^7) or slender (♀); sides of the prothorax with two acute teeth and an acutely prominent to obtuse or rounded basal angle. [Type *P. coriarius* Linn.].....**Prionus**
- Antennæ having the surface of the outer joints even and not reticulate with raised lines.....2
- 2—Sides of the prothorax as in *Prionus*; antennæ (σ^7) with the joints not sinuate beneath at their apices, 12-jointed; posterior tarsi distinctly shorter and broader than in *Prionus* and more scantily clothed beneath. [Type *Prionus palparis* Say].....**Prionina**
- Sides of the prothorax rounded, without trace of teeth, except occasionally a small median denticle; antennæ (σ^7) formed as in *Prionus*, the joints deeply sinuate beneath at their apices or strongly bilobed, closely imbricate, 13- to 14-jointed; posterior tarsi as in *Prionus* but less padded beneath and with more evident long hairs intermingled. [Type *Prionus emarginatus* Say].....**Homæsthesis**

Prionus is very widely distributed but the last two genera seem to be confined to the Rocky Mountain districts.

Prionus Geoff.

A study of the American species of this genus, which with the Prioninæ in general are very much more developed and diversified than in the palæarctic fauna, reveals an unanticipated variety of structure, which renders a satisfactory taxonomic arrangement of them much less difficult than is usually assumed. The species and subspecies are numerous and can be segregated into the three following very evident subgeneric groups:

Antennæ 12-jointed in both sexes, imbricate (♂) or slender and serrate (♀), the serratures on the inner sides of the apices of the joints.

Group I

Antennæ (♂) having from about 14 to about 19 joints, usually with one or two less in the female than in the male, the joints, except the terminal, formed in both sexes nearly as in group I. Group II

Antennæ (♂) with 28 to 32 joints, very stout, closely imbricated and greatly developed, or (♀) much shorter and slender, having notably fewer joints and with the outer joints short, transverse and not asymmetric as in the two preceding groups but bilaterally symmetric.

Group III

The first group is distributed abundantly from the Atlantic to the Pacific, but apparently does not extend far into Mexico; the second extends from the Atlantic to the Sonoran regions but does not enter the true Pacific fauna, while the third, generally rare in individuals and apparently comprising but few species, is confined to Texas and adjacent regions.

Group I.

Prionus in sp.

The very numerous species and subspecies of this group may be distinguished by the following structural characters:

Eyes with a very large emargination which extends more or less nearly half way through them, the inner part of the eyes less full or shorter antero-posteriorly, the head generally larger, frequently swollen behind the eyes; color black or blackish as a rule, the metasternal pubescence less developed or wanting medially, especially in the female; male usually much smaller than the female. 2

Eyes with a relatively smaller and shallower emargination, which never extends so deeply, the inner part of the eyes fuller; head never notably swollen at base; color never black; metasternum always pubescent throughout in both sexes. 11

2—Antennal joints (♂) only very feebly or barely at all sinuate at their apices beneath; body more oblong, very obtuse behind, the pro-

- thorax usually nearly as wide as the elytra, very transverse, more parallel or with feebler medial lateral tooth, the elytra strongly sculptured. Atlantic regions.....3
- Antennal joints (♂) deeply sinuate beneath at tip, the prothorax generally narrower and with much more pronounced medial tooth at the sides; elytra more oval, generally less obtuse behind, less strongly or deeply sculptured though sometimes partially rugose; species including the largest of the genus. Sonoran regions.....5
- 3—Elytral punctures coarse and deeply impressed but everywhere separated, generally by nearly twice their diameters; posterior tibiæ (♀) not concave on their lower face except feebly toward base. Oblong, parallel, rather shining, glabrous, pale testaceous, the elytra more yellowish than the anterior parts; head rather small, but little more than half as wide as the prothorax, not as wide at base as across the rather convex eyes, which are separated by nearly a fourth more than their own width (viewed vertically), the surface smooth, finely, sparsely punctured, with a moderately impressed striiform and entire canaliculation; last joint of the maxillary palpi not quite so long as the preceding; antennæ slender, unusually short, scarcely more than half as long as the elytra, slightly compressed, parallel or very feebly tapering apically, the basal joint stout, the last joint less than twice as long as wide and a little shorter and narrower than the eleventh; prothorax and elytra nearly as in *laticollis* (♀), the former differing in having the anterior tooth obtuse and blunt, scarcely evident, the latter more elongate, parallel, very feebly arcuate at the sides, just visibly wider than the prothorax, almost twice as long as wide and with feeble discal ridges. Length (♀) 26.0 mm.; width 11.0 mm. New York (Adirondack Mts.)—J. F. Kemp.....**kempi** n. sp.
- Elytral punctures apparently as in the preceding, also similar in the very transverse and widely separated eyes, obtuse or rounded anterior thoracic teeth and short antennæ but very much larger in size; color piceous, shining; prothorax very transverse, broadly bisinuate at base, the surface very smooth, the basal teeth obtuse, the intermediate broadly prominent; elytra slightly wider than the prothorax; antennæ (♀) slightly longer than the head and prothorax, serrate toward tip; male unknown. Length 1.65 inch (41.25 mm.). Georgia. [*P. curticornis* Lec.—Journ. Acad. Phil., ser. 2, II, p. 109].
- curticornis** Lec.
- Elytral punctures unevenly coalescent, with the sculpture deeply vermiculato-rugose; hind tibiæ concave throughout, more feebly and less asperately punctate in the female as usual.....4
- 4—Prothorax in both sexes very nearly as wide as the elytra, very transverse, almost as wide at base as at apex; elytra narrowed but little apically, each with three very feeble raised discal threads, the lateral obsolescent; color black, the elytra feebly brunnescent in the female; head (♂) well developed, rather more than three-fifths as wide as the prothorax, strongly and closely punctured, with two smooth elevated spaces and impressed median line as usual, the eyes separated by rather more than their own width, the tempora

not quite so prominent as the eyes, or (♀) very large, nearly two-thirds as wide as the prothorax, smoother and less punctate, strongly swollen at base, the tempora more prominent than the eyes, which are less convex than in the male, the eyes separated by two-fifths more than their own width; elytra (♀) nearly three-fifths longer than wide. Length (♂) 27.0-30.0, (♀) 33.0-39.0 mm.; width (♂) 11.0-12.0, (♀) 15.0-18.0 mm. Northern New York and New England to District of Columbia. [*P. laticollis* Drury,—Ill. II, 1773, Ind.; I, p. 83; *brevicornis* Fabr.,—Syst. El. II, p. 260; LeConte,—Journ. Acad. Phila., 2nd ser., II, p. 109].....**laticollis** Drury

A—Similar to *laticollis*, except that the head (♂) is less developed, not quite three-fifths as wide as the prothorax, with the eyes separated by evidently less than their own width, or (♀) not quite so large, rather more than three-fifths as wide as the prothorax, the eyes separated by but little more than their own width, the tempora parallel, nearly straight and equally prominent as the eyes, the elytra (♀) notably shorter than in *laticollis* and not entirely covering the abdomen, barely one-half longer than wide. Length (♂) 21.5-25.0, (♀) 30.0-38.0 mm.; width (♂) 9.5-10.7, (♀) 14.0-16.0 mm. The length as in all the other species of *Prionus* being measured from the apex of the mandibles to the end of the elytra. Indiana,—Levette.....**oblongus** n. subsp.

Prothorax much narrower than the elytra, distinctly narrower at base than at apex; elytra much narrowed from base to apex. General color and sculpture throughout as in *laticollis*; head, prothorax and elytra increasing progressively and almost uniformly in width, the first two-thirds as wide as the prothorax, the eyes convex, separated by about two-thirds their width, the tempora much less prominent and feebly converging to the base; antennæ nearly similar but shorter and apically more slender; prothorax very much smaller, very short, about three-fourths as wide as the elytra, as in *laticollis* except that the sides behind the medial teeth rapidly converge to the base, the basal angles much more than right but with their apices more acute and prominent than in *laticollis*; elytra narrower and tapering, with more arcuate sides, the apex much less broadly obtuse. Length (♂) 19.8 mm.; width 8.7 mm. A single specimen of unknown origin and unindicated locality.....**parvus** n. sp.

5—Hind angles of the prothorax wholly obliterated, very broadly and evenly rounded. Body very stout, convex, the pronotum not much more so than the elytra, black, slightly picescent posteriorly and beneath, the abdomen testaceous throughout, head very large, fully three-fourths as wide as the prothorax, the eyes scarcely at all convex, the tempora parallel, feebly arcuate, slightly swollen beyond the eyes, the latter separated by a little less than their own width; antennæ black, very stout basally, rather rapidly tapering and feebly picescent distally, the last joint a little longer than the preceding, almost four times as long as wide, widest near tip, its inner face oblique in more than apical fourth; prothorax a little more than twice as wide as long, rather strongly but sparsely, irregularly punctate, the median tooth rather strong, very acute and slightly reflexed;

scutellum wider than long, parabolic; elytra at base about a fourth wider than the prothorax, the sides thence but very feebly converging to the broadly rounded apices, rather loosely punctate, very finely externally, more coarsely and irregularly toward the suture, the raised lines barely traceable, three-fifths longer than wide; metasternum with coarse luteous-yellow pubescence throughout, somewhat sparser in a small central area; tarsi stout, the pads of the posterior finely sulcate, those of the middle tarsi entire, the sulcus barely traceable. Length (♂) 46.0 mm.; width 19.7 mm.; width of head 10.0 mm. A single example without indication of locality.

validiceps n. sp.

Hind angles of the prothorax acute, sometimes slightly prominent and dentiform as usual. 6

6—Hind angles obliquely truncate, so that the posterior denticle is obviously in front of the line of the base; median tooth very stout, its anterior slope making an angle of about 45° with the line of the base. 7

Hind angles not obliquely truncate, the posterior denticle about in the prolongation of the line of the base, with which the anterior slope of the much longer and more acute median tooth makes an angle which is very much less than 45°. 9

Hind angles obliquely truncate as in 7, but with the middle teeth slender and abrupt in formation or spiniform as in the *californicus* group. . 10

7—Prothorax large, very convex, with the base strongly arcuate medially; body large and very stout, convex, strongly shining, black, the legs and abdomen blackish-castaneous; head moderately large, very slightly swollen basally beyond the scarcely convex eyes, which are separated by slightly more than their own width; antennæ (♀) piceous-black, the last joint shorter than the preceding, oval, twice as long as wide; prothorax barely at all more than twice as wide as long, polished, with rather numerous small but deep punctures and several large impunctate areas, the median teeth very acute, turned upward outwardly and distinctly reflexed or hamate, their anterior slope biprotuberant; anterior angles oblique, the apical tooth distinctly behind their anterior limit; scutellum large, almost circularly rounded, barely impressed along the middle; elytra at base a fifth wider than the prothorax, three-fifths longer than wide, the sides rather strongly, evenly arcuate, narrowing a good deal toward the somewhat narrowly rounded apices, the raised lines barely traceable, the punctures sparse, rather small, becoming coarser and rugulose near the suture behind the middle but not at tip, the sutural angles evident though but slightly dentate; tarsi not notably stout, the posterior finely, deeply canaliculate beneath, the intermediate canaliculate basally but scarcely at all thence through the third joint; anterior and middle femora strongly compressed; metasternum glabrous, very finely, not densely punctulate and slightly pubescent laterally. Length (♀) 49.0 mm.; width 21.0 mm.; width of head 9.0 mm.; length of prothorax 9.0 mm. New Mexico (Fort Wingate),—Shufeldt. **tumidus** n. sp.

Prothorax and other general characters as in *tumidus* but larger, not quite so black, the abdomen pale testaceous with a narrow apical border on all the segments deep black; surface very highly polished; head larger, rather strongly swollen basally beyond the eyes, which are separated by very much more than their own width; antennæ (♀) with the last joint much longer, fully as long as the preceding and three times as long as wide; prothorax nearly similar, except that the very large and prominent, finely acute and scarcely at all reflexed median teeth are horizontal in plane, their anterior slope very obtusely unidentate; scutellum nearly similar but more deeply canaliculate; elytra nearly similar but much more dehiscent behind the middle, still more finely and very sparsely punctate, with the three raised lines very fine and feeble though evident; inferior groove of the hind tarsi becoming very broad on the basal joint, distinct through the first three joints of the intermediate; anterior and middle femora scarcely at all compressed; punctulation toward the sides of the metasternum much finer and denser. Length (♀) 56.0 mm.; width 22.0 mm.; width of head 10.4 mm.; length of prothorax 9.0 mm. Arizona (locality not specified).....*vastus* n. sp.

Prothorax very much shorter and less convex, being as usual throughout the genus in these respects.....8

8—Color black, the upper surface shining throughout. Body intense black above and beneath (♂), or picescent beneath (♀), moderately stout; head about as wide at base as across the eyes, the latter separated by a little less (♂) to sensibly more (♀) than their own width; antennæ as usual in form, deep black, with the last joint not quite as long as the preceding, nearly four times as long as wide, with the inner face beveled apically (♂), or piceous-black, with the last joint shorter than the preceding, a little more than twice as long as wide, less compressed, more oval and not beveled apically (♀); prothorax very much more than twice as wide as long, with rather small but deep, sparse and irregularly distributed punctures, the anterior slope of the middle teeth not modified, straight; scutellum very broadly rounded at apex; elytra a fourth to a fifth wider than the prothorax, with the humeral angles only feebly tumid, the sides rather rapidly converging and broadly arcuate thence to the somewhat narrowly rounded apices, three-fourths longer than wide, the raised lines very feeble, obsolescent in the female, the punctures rather strong, moderately close, everywhere widely separated, the surface sometimes becoming feebly rugose medially toward base (♀); metasternum pubescent throughout (♂), or very minutely, not densely punctulate and finely pubescent toward the sides only (♀); middle and hind tarsi canaliculate throughout in both sexes, the channel not much wider on the first joint; male very much smaller than the female. Length (♂) 29.0, (♀) 46.0–47.0 mm.; width (♂) 11.8, (♀) 18.0–18.2 mm.; length of prothorax (♀) 6.25 mm.; width of head (♀) 8.3–8.8 mm. New Mexico (Jemez Springs),—Woodgate.
tristis n. sp.

Color very dark castaneous, the elytra strongly alutaceous in lustre. Body narrower in form, with relatively much larger head, the under

surface black, the abdomen entirely pale testaceous; head fully two-thirds as wide as the prothorax, the parallel and scarcely arcuate tempora about as prominent as the eyes, which are rather convex and separated by nearly their own width, the antennæ dark castaneous, very stout basally, well developed, the last joint (♂) four times as long as wide, very gently beveled apically, with a central pit at the summit of the slope and fully as long as the preceding; prothorax short, much more than twice as wide as long, broadly sinuate at apex, feebly arcuate at base, the median tooth very acute, hamate, the sides of the apex anteriorly prominent but rounded, thence posteriorly oblique and straight to the apex of the acute anterior teeth; punctures sparse but rather strong; scutellum very obtuse; elytra fully a fourth wider than the prothorax, the sides rather strongly converging and unusually feebly arcuate to the obtusely rounded apex, the raised lines almost obsolete, the punctures fine but deep, everywhere widely separated; close coarse pubescence of the metasternum sparse at the centre, the hind tarsi with a rather narrow but deep and even canaliculation throughout, represented on the middle tarsi by a very fine and barely visible stria. Length (♂) 43.0 mm.; width 15.8 mm.; length of prothorax 5.7 mm.; width of head 8.3 mm. Arizona,—Levette (locality unrecorded).....**alutaceus** n. sp.

9—Body oblong, subparallel, rather depressed, deep black throughout, the abdominal segments dark testaceous, black basally; surface shining; head rather small, but little more than half as wide as the prothorax, the tempora parallel, about as prominent as the eyes, which are somewhat convex and separated by barely more than their own width, the median sulcus of the front unusually large and deep; antennæ (♀) deep black, except very near the apex, the last joint rather small, but little more than twice as long as wide and much shorter than the preceding, parallel; prothorax short, two and one-half times as wide as long, very finely, sparsely and irregularly punctate, the middle teeth unusually long, very acute, barely at all recurved, the apex throughout nearly as in the preceding; scutellum very obtuse; elytra barely three-fifths longer than wide, about a fifth wider than the prothorax, the sides nearly straight and subparallel, arcuate and converging in about apical third, rugosely but not strongly or densely sculptured, the two inner raised lines distinct; metasternum and tarsi as in *tristis*, except that the second joint of the hind tarsi is much more rapidly narrowed from apex to base, the canaliculation conspicuous and equally distinct on the middle and posterior. Length (♀) 43.0 mm.; width 17.0 mm.; length of prothorax 6.0 mm.; width of head 7.4 mm. New Mexico (Jemez Springs),—Woodgate.....**tetricus** n. sp.

10—Form stout, oblong, subparallel, convex, shining, rather pale rufocastaneous throughout, the head blackish, the prothorax nearly so; head large, the parallel tempora swollen and more prominent than the eyes, which are separated by a little more than their width; antennæ (♀) unusually slender, the outer joints narrower and less serrate than in any other species, the last joint fully three times as

- long as wide and a little longer than the preceding; prothorax not very short, only slightly more than twice as wide as long, finely but deeply, sparsely and very unevenly punctate, the apical teeth acute, the sides of the apex prominent and oblique before them, the middle teeth very slender but not long, the base broadly rounded medially; scutellum very broadly obtuse; elytra about a fourth wider than the prothorax, subparallel, very obtusely rounded at apex, only one-half longer than wide, finely, sparsely punctate throughout, not at all rugose, the two inner raised lines rather strong; metasternum very finely but closely punctulate toward the sides; tarsi more slender than usual, the canalication very fine but entire and similar on the middle and posterior soles. Length (♀) 40.0 mm.; width 16.2 mm.; length of prothorax 6.4 mm.; width of head 7.8 mm. Colorado, —Levette (locality unrecorded).....**solidus** n. sp.
- 11—Antennæ (♂) but moderately and very gradually enlarged toward base, the joints not or scarcely at all sinuate beneath at tip; elytral punctures rather large and sparse but deep and perforate, not impressed. Atlantic regions.....12
- Antennæ (♂) very stout toward base, with the joints deeply sinuate beneath at their apices; elytral punctures not so coarse as a rule and always impressed, not perforate.....13
- 12—Form much elongated, shining, piceous to tawny-yellow, the head and, to a less degree, the prothorax, darker; head very moderate or rather small in size, much narrower at the tempora than across the eyes, which are larger and more convex than in any other species and with an unusually small emargination, separated by barely one-half their width in both sexes; antennæ (♂) extending to apical fifth of the elytra, the anastomosing lines unusually strong, the last joint obliquely truncate beneath at base, or (♀) slender, extending to the middle of the elytra, with the last joint much shorter and narrower than the preceding; prothorax very transverse, moderately bisinuate at base, rather prominent but broadly rounded at the sides of the transverse apex, thence obliquely rounded to the apex of the acute anterior teeth, the middle tooth short, acute, hamate, much nearer the anterior than in any other species, the hind angles right, blunt, not at all prominent; surface with numerous small but strong punctures; scutellum moderate, more or less angulate; elytra long, very nearly twice as long as wide, about a fourth wider than the prothorax, obtuse at tip, subparallel, with broadly arcuate sides, the raised lines subobsolete; metasternum throughout with rather long dense pubescence (♂), or finely and closely punctulate, with short inconspicuous pubescence, becoming obsolete medially (♀); tarsi (♀) slender, the groove becoming obsolete on the third joint of the posterior and visible only toward base of the first joint of the intermediate. Length (♂) 27.0–29.0, (♀) 36.5–42.0 mm.; width (♂) 10.6–11.0, (♀) 14.0–16.5 mm.; extreme length and width of prothorax (♀) 5.8×13.4 mm. Middle Atlantic states to Florida, also Indiana. Abundant. [*P. popularis* Dalman,—Sch., Syn. Ins., I, 3, 1817; *P. laevigatus* Harris,—Tr. Nat. Hist. Soc. Hartford, 83].
- popularis** Dalm.

A—Similar but still more elongate, with narrower and less transverse prothorax, less approximate eyes and still smaller head, the scutellum larger, broader and more rounded; eyes separated by two-thirds their own width; elytra fully twice as long as wide; tarsi similar. Length (♀) 41.0 mm.; width 16.0 mm.; length and width of the prothorax 6.0×12.3 mm. Locality unrecorded.

prolixus n. subsp.

Form much stouter, larger, black, the elytra rather abruptly dull rufous in apical two-thirds; head more developed, two-thirds as wide as the prothorax, the eyes separated by three-fourths their width, the mandibles notably larger and thicker; antennæ much shorter, scarcely extending to basal third of the elytra, the last joint as long as the preceding but narrower; prothorax relatively much narrower and less transverse though similar otherwise, the scutellum similar; elytra much broader, with the arcuate sides more narrowly rounding behind, nearly two-fifths wider than the prothorax, two-thirds longer than wide; tarsi and metasternum similar; body beneath black, the abdomen red. Length (♀) 47.0 mm.; width 18.0 mm.; length and width of prothorax 6.7×12.5 mm. Indiana.

bicolor n. sp.

13—Species of the Atlantic regions. Body rufo-piceous in color, shining, the prothorax sparsely punctulate, transverse though less so than in *pocularis*, scarcely more than twice as wide as long, strongly bisinuate at base, the lateral teeth rather prominent, the posterior angles right; elytra wider than the prothorax, coarsely punctate, the raised lines obsolescent; antennæ (♂) slightly shorter than the body, stout, imbricate, the joints obliquely sinuate, prominent internally. Length 35.0 mm. Georgia.....**obliquicornis** Lec.

Species of the Sonoran and Pacific regions.....14

14—Last antennal joint normal, not at all appendiculate.....15

Last antennal joint (♂) extremely long, slender, sometimes appendiculate.....22

15—Apical margin of the prothorax transverse, not or scarcely at all sinuate, the finely pointed apical teeth projecting without sensible obliquity and nearly in line with the apical margin; basal angles prominent and acute, obliquely truncate postero-externally.....16

Apical margin broadly but sensibly sinuate, anteriorly prominent at the sides and thence posteriorly oblique to the apex of the anterior teeth.....19

16—Head and prothorax relatively unusually developed for this group; body large, rather stout and convex, subparallel, the sides of the elytra converging slightly behind to the rather broadly rounded apices; color piceo-castaneous throughout, rather shining; head almost half as wide as the elytral base, the tempora but feebly converging behind the rather feebly convex eyes, which are separated by three-fourths their width, large, with very moderate emargination; antennæ (♂) very stout and imbricate basally, two-thirds as long as the body, the last joint fully as long as the preceding but narrower, four times as long as wide, with straight and parallel sides in apical half, the lower side thence oblique and straight to

the base; prothorax strongly transverse, four-fifths as wide as the elytra, the median teeth very stout, rapidly finely acuminate and notably reflexed or hamate; punctures numerous, fine but deep; scutellum broadly angulate at tip; elytra two-thirds longer than wide, finely but strongly, rather sparsely punctate, the two inner raised lines feeble; sides of the apical abdominal sinus (σ^7) tumid on the surface; tarsi unusually stout. Length (σ^7) 47.0 mm.; width 18.2 mm.; length and width of prothorax 6.2×15.0 mm.; width of head 8.2 mm. Texas (El Paso),—Dunn. [*P. curvatus* Lec.,—Col. of Kansas and East. N. M., 1859, p. 19,—Santa Fé]. **curvatus** Lec.

Head and prothorax smaller, the latter similarly very transverse. . . . 17
17—Lateral teeth of the prothorax long, very slender and spiculiform.

Body large, very stout, rufo-castaneous, the head and prothorax piceous-black, convex, shining; head moderate, nearly as in *curvatus*; antennæ (φ) slender, three-fifths as long as the body, the last joint more than three times as long as wide, distinctly longer than the preceding, the inner face beveled at tip and with a small pit at the summit of the bevel; eyes separated by three-fourths their width; prothorax more convex than in the others of this group and with more numerous and stronger punctures, the long and very slender anterior and middle teeth not or scarcely at all reflexed; scutellum large, very obtuse; elytra three-fifths longer than wide, a third wider than the prothorax, tapering but feebly, the apices broadly rounded, the marginal impression just behind the humeri unusually developed, the two inner raised lines very feeble; punctures fine and everywhere sparse; tarsi rather slender, the canaliculation deep and distinct on the two posterior pairs. Length (φ) 47.0 mm.; width 20.0 mm.; length and width of prothorax (as here uniformly measured from the apices of the middle teeth) 6.6×15.7 mm.; width of head 8.2 mm. Arizona (Grand Cañon of the Colorado),—T. Mitchell Prudden **spiculosus** n. sp.

Lateral teeth acute and finely pointed but shorter and not spiculiform. . 18

18—Form moderately stout, convex, rather shining, piceous-black to dark castaneous, the head (σ^7) nearly as in *curvatus* but not quite so large, or (φ) notably small, the eyes nearly as in that species, the antennæ (σ^7) not quite so stout basally, the last joint evenly elongate-oval, three times as long as wide and very much shorter than the preceding, or (φ) unusually slender, but feebly serrate distally, with the last joint as in the male though only a little more than twice as long as wide, unmodified on the inner face and much shorter than the preceding; prothorax nearly as in *spiculosus* in general form, rather strongly punctate; scutellum very obtuse; elytra two-thirds (σ^7) to four-fifths (φ) longer than wide, the punctures rather small and sparse but strong and conspicuously impressed; tarsi rather slender, canaliculate as in *spiculosus*; surface at the ends of the apical abdominal sinus (σ^7) not tumid as in *curvatus*. Length (σ^7) 35.0–39.5, (φ) 37.0–43.0 mm.; width (σ^7) 14.5–16.2, (φ) 13.8–17.0 mm.; length and width of prothorax (σ^7 , φ) 5.5×10.0 mm.; width of head (σ^7) 6.8–7.5, (φ) 6.0–6.8 mm. Colorado (Boulder Co.). Abundant. **consors** n. sp.

A—Similar to *consors* but slightly less convex and with more parallel elytra, the eyes similar, the antennæ (♀) longer, stouter and more strongly serrate, nearly three-fifths as long as the body, the last joint similar but very nearly as long as the preceding, feebly beveled on the inner side in apical two-fifths, with a small pit at the summit of the bevel; prothorax similar but with the median teeth rather more reflexed; scutellum similarly very obtusely and broadly rounded; elytral punctures much less distinct, being very fine, feeble and everywhere remote, the fine raised lines rather more distinct; tarsi similar in structure but notably stouter. Length (♀) 46.0 mm.; width 16.5 mm.. New Mexico (Jemez Springs),—Woodgate.....**acomanus** n. subsp.

B—Similar to *acomanus* but with a still smaller head and rather less widely separated eyes, the antennæ not so long, notably more slender and less serrate, nearly as in *consors* but still more slender, the last joint (♀) only about twice as long as wide, not beveled apically and without trace of pit, much shorter than the preceding joint; prothorax throughout as in *consors* but more finely and less strongly punctate; scutellum differing from either of the two preceding in being fully as long as wide and narrowly and evenly parabolic in form; elytra paler testaceous, otherwise as in *acomanus* in form and punctuation, the raised lines still more distinct; tarsi as in *consors*, more slender than in *acomanus*. Length (♀) 40.0 mm.; width 15.5 mm. New Mexico (Fort Wingate),—Shufeldt.....**proximans** n. subsp.

Form much more slender and small in size, pale testaceous in color, strongly shining; head small, the eyes separated by less than three-fifths their width, the ocular width much greater than the temporal; antennæ (♂) red-brown, moderately stout basally, gradually finely tapering distally, extending to apical fifth of the elytra, the last joint very long and slender, fully five times as long as wide, parallel, as long as the preceding but much narrower, truncate at apex, not beveled apically; prothorax unusually small, short and transverse, nearly as in *consors* but still shorter and more finely and sparsely punctate; scutellum moderate, obtusely rounded; elytra rather rapidly tapering from base to apex, with but very feebly arcuate sides, the apices rather narrowly rounded, more than three-fourths longer than wide and more than a third wider than the prothorax; punctures rather large, deeply impressed, conspicuous though widely, very unevenly separated; abdomen unusually slender and tapering, the apical sinus simple; tarsi slender, especially the posterior as usual. Length (♂) 31.0 mm.; width 11.0 mm.; length and width of prothorax 3.8×8.5 mm. Arizona (Cañon of the Colorado River),—Prudden.....**angustulus** n. sp.

19—Hind angles of the prothorax obliquely and sinuously truncate, acutely prominent externally and anterior to the line of the base. . 20

Hind angles not oblique, right, rather blunt and in line with the basal margin. 21

20—Emargination of the eyes small; antennal tubercles moderate;

elytral punctures fine, unusually close-set. Body moderately stout (σ^7), or notably so and very much larger (φ), moderately shining, pale testaceous in color, the anterior parts somewhat darker; head moderate or relatively small, the eyes separated by three-fourths their width in both sexes; antennæ (σ^7) very stout and imbricate basally, slender apically, extending to apical fourth of the elytra, the last joint very long, as long as the preceding, nearly five times as long as wide, much compressed, rounded at apex, subclaviform or gradually wider from base to the apical arcuation, the apical bevel on the inner side very feeble and long, its summit feebly protuberant, or (φ) slender, perceptibly tapering and strongly serrate distally, barely half as long as the body, the last joint parallel, three times as long as wide, as long as the preceding, truncate at apex, less compressed than in the male, the apical slope on the inner face very gentle and beginning behind the middle; prothorax transverse, rather strongly punctured, closely and rugosely so laterally, the anterior teeth small, the intermediate large, very acute and somewhat reflexed as a rule; scutellum very obtuse; elytra a third wider than the prothorax, about two-thirds longer than wide in both sexes, the feebly arcuate sides much more rapidly converging from base to apex in the male than in the female, the raised lines very feeble; metasternal pubescence greatly developed in both sexes but especially in the male; tarsi only moderately slender, the canaliculation fine but distinct and entire on the middle and posterior. Length (σ^7) 38.0, (φ) 53.0 mm.; width (σ^7) 14.0, (φ) 21.4 mm. California and Oregon. [*P. californicus* Mots.,—Bull. Mosc., 1845, I, p. 89; *P. crassicornis* Lec.,—Journ. Ac. Phila., ser. 2, II, 1852, p. 108].....**californicus** Mots.

A—Smaller than the preceding and much more parallel in the male, the elytra only very feebly narrowing behind and more broadly rounded at apex; color, sculpture and general features similar; head relatively much smaller, the eyes less separated, distant by one-half their width; antennæ (σ^7) not quite so stout basally but otherwise similar, the last joint very slender and compressed, five times as long as wide, parallel, not inflated apically and not at all modified on the inner face; tarsi notably more slender than in *californicus*. Length (σ^7) 31.5 mm.; width 12.4 mm. California (locality not recorded).....**ineptus** n. subsp.

B—Very much smaller than *californicus* but similar in its pale testaceous color, only the head being darker however, shining, convex; head similar, the eyes separated by two-thirds their width; antennæ (φ) about half as long as the body, very slender, the outer joints but slightly serrate, the last evenly oval, about as long as the preceding but only twice as long as wide; prothorax as in the two preceding though much more finely, sparsely and less conspicuously punctate; scutellum broad, very obtuse; elytra three-fifths longer than wide, finely, closely punctate; tarsi long, as in *californicus* but rather more slender, the intermediate barely at all less slender than the posterior and not decidedly so as is

the case in *californicus*. Length (♀) 34.0 mm.; width 14.4 mm.

Arizona (probably western).....**punctulatus** n. subsp.
Emargination of the eyes very deep, extending almost half way through; antennal tubercles very prominent, separated by a remarkably deep sulcus; punctures of the elytra very fine and everywhere remote. Body only moderately stout, convex, shining, pale piceotestaceous; head moderate, the eyes large and very convex, separated by less than half their width; antennæ (♂) only extending about three-fifths from the elytral base, stout basally, moderately attenuated and strongly compressed distally, the last joint as long as the preceding, four times as long as wide, rounded at tip, parallel, the lower margin becoming oblique in less than basal half to the base, the lower face sloping rapidly in a little more than apical fourth, its upper limit well marked and with a shallow pit; prothorax as in *californicus* though slightly less transverse, strongly but loosely punctured; scutellum very obtuse; elytra two-thirds longer than wide, a third wider than the prothorax, rather tapering and with broadly arcuate sides from base to apex, the raised lines barely traceable; metasternum less pubescent than in *californicus*, the tarsi similar but with a much wider glabrous sulcus beneath. Length (♂) 40.0 mm.; width 15.7 mm. Arizona (locality unrecorded).

fissifrons n. sp.

21—Form shorter and stouter than in any of the preceding and darker in color, blackish-piceous throughout, moderately shining, the elytral punctures larger, deeper and more conspicuous than in any other of this section though not as close-set as in *californicus*; head rather small; eyes large, with shallow emargination, separated by three-fifths their width; antennæ (♂) very stout and imbricate basally, only moderately tapering and rather compressed distally, extending to apical third of the elytra, the last joint parallel, elongate-oval, rather longer than the preceding, almost four times as long as wide, the apical slope of the inner face rather pointed posteriorly, ending above the median line and much less than half as long as the joint; prothorax much wider than in the *californicus* group preceding, strongly transverse, nearly similar in general form and sculpture, except that the median and anterior teeth are much more equal in size; scutellum short and very broadly obtuse; elytra not quite three-fifths longer than wide, only about a fifth wider than the prothorax, gradually feebly tapering, with distinctly arcuate sides, from base to the obtusely rounded apex, the raised lines rather strong; metasternum conspicuously pubescent; tarsi rather thick, the sulci entire, broad on the posterior, fine on the intermediate. Length (♂) 35.5 mm.; width 14.0 mm. Texas (near El Paso),—Dunn.....**texanus** n. sp.

22—Body somewhat stout and convex, oblong-suboval, rather shining, blackish-piceous in color, the abdomen pale luteo-flavate; head rather small, the eyes less developed internally than in the preceding section and with a noticeably large emargination extending two-fifths through, separated by less than three-fifths their width; antennæ (♂) moderately stout basally, long, very gradually slender

and tapering distally, extending to apical fifth of the elytra, the last joint serriform, nearly like the preceding and about as long but slightly narrower, the appendage, which extends from the upper part of its similarly oblique apex, half as long and wide as the joint, attached to it rigidly and without suture; on the right antenna this terminal process, instead of being differentiated, is fused to the apex of the joint throughout its width, forming a single very long joint, with a subdifferentiated apical slope, as mentioned in most of the foregoing species and indicating that this twelfth joint of the male is composed of what may have been two distinct joints in the archetypes of the genus; this consolidated joint of the right antenna is nearly one-half longer than the preceding, being on both antennæ very much more elongate than in any other species; prothorax rather small, nearly as in *californicus* throughout; scutellum very obtuse; elytra about three-fifths longer than wide, two-fifths wider than the prothorax, moderately tapering, with distinctly arcuate sides, to the moderately obtuse apex, the punctures somewhat small but strong, well spaced, the raised lines very feeble; on each there is a feeble longitudinal impression at the middle near outer third; metasternum as strongly pubescent as in *californicus*; tarsi nearly as in that species. Length (♂) 34.0 mm.; width 13.8 mm. Arizona (Cañon of the Colorado),—Prudden. **terminalis** n. sp.

Without knowing the species described above under the name *kempi*, in honor of Prof. James F. Kemp of Columbia University, it would have been difficult to place the *curticornis* of LeConte, but that form gives a very satisfactory clue and, together with *kempi*, it constitutes a well marked and distinctly isolated group of the genus. I do not think that *kempi* can be identical with *curticornis*, however, as they differ very much in size, in geographic habitat and in the apparently greater thoracic width of the former. *Obliquicornis* of LeConte, seems to have the antennæ thicker and more imbricate basally than in *pocularis*, resembling more those of the western forms, from which it probably differs specifically since it occupies a different zoological province; it is correctly recorded as a valid species in the Munich catalogue. One female specimen of *tristis* departs considerably from the type in having the elytra for the most part perfectly smooth, with the punctures everywhere very fine, remote and feeble, becoming obsolescent on the flanks and also having the prothorax relatively wider.

It is impracticable to include *heroicus* Semenov (Rev. Russ. Ent., 7, p. 259)—a name substituted for *heros* Fall (Can. Ent., 1905, p. 274) because of the previous use of the latter by Semenov himself,—as no characters are published which admit of its interpolation in

the table. It is highly improbable that it can be either *tumidus* or *vastus*, described above, as the very striking convexity of the unusually large prothorax would almost certainly have been mentioned by the describer. It is probably allied to the central New Mexican *tristis*, having a shorter and more transverse prothorax, more nearly like that of *laticollis* and of the usual moderate convexity.

Some of the more abnormal characters employed above to distinguish particular species, such as the broadly rounded basal thoracic angles of *validiceps*, the very strong antennal tubercles of *fssiceps*, or the unusually elongated last male antennal joint of *terminalis*, are of such a nature as to render it unfortunate that more material could not be at hand wherewith to test their constancy; but in every such instance other accompanying differences tend to qualify them as species and serve to dispel any inclination to regard them as aberrations or sports.

Group II.

Subgenus *Riponus* nov.

The species of this group are fewer in number and of much smaller size than in *Prionus* proper, as defined above. Those in my cabinet may be known as follows:

- Antennæ in both sexes 15-jointed. 2
 Antennæ (♂) 16- to 17-jointed, the last joint complex, or (♀) 15-jointed. 4
 Antennæ (♂) 18- to 19-jointed, the last two or three fused into a very complex mass, the female not at hand and apparently relatively rare. 5
 2—Basal angles of the prothorax turned upward, acute and very prominent. Body stout, parallel, moderately convex, very shining, black, the elytra piceo-castaneous, the under surface pale brown, the abdomen and legs pale brownish-testaceous; head small, the tempora arcuately converging behind the eyes, which are scarcely at all convex, large, moderately emarginate and separated by fully their own width; antennæ (♀) slender, evidently more than half as long as the body, the joints distally less compressed, the fourteenth and fifteenth joints completely fused into a very irregular elongate mass, nearly twice as long as the preceding; prothorax moderate, very finely and sparsely punctate, coarsely and rather closely at the sides, more than twice as wide as long, the sides of the apex obliquely truncate to the apex of the small but acute apical teeth, the middle teeth slightly more prominent, finely spiculiform; scutellum very obtuse; elytra oblong, narrowing only in apical third to the very



obtuse apex, two-thirds longer than wide, fully a third wider than the prothorax, finely, remotely punctate, rather coarsely and rugosely though scarcely more closely toward the suture posteriorly, the raised lines evident, the outer one obsolete; prosternum finely punctate and pubescent, the metasternum conspicuously so throughout; tarsi moderate, the channel obsolete on the second and third joints of the intermediate. Length (♀) 40.0 mm.; width 16.8 mm. Mexico (Colonia Garcia, Chihuahua),—C. H. T. Townsend.

**townsendi* n. sp.

Basal angles of the prothorax not turned upward, right and more or less blunt, not at all prominent. 3

3—Form much narrower, moderately shining, pale rufo-testaceous in color throughout; head small, the eyes transverse, but slightly convex, the inner part not much developed, about half divided by the rounded emargination, separated by two-thirds their width in both sexes, the tempora not more prominent (♂), diverging toward base (♀); antennæ (♂) stout, only very slightly tapering, barely two-thirds as long as the body, the fifteenth joint simple, as long as the preceding, much compressed, narrowing from the rounded apex to the base, broad and with its surface moderately irregular, or (♀) slender, two-thirds as long as the body, with the fifteenth joint composed of a basal part similar to the preceding joint though smaller and a broad, obtusely truncate and abruptly narrowed prolongation without dividing suture; prothorax small, more than twice as wide as long, nearly as in the preceding, except the basal angles and in the less coarsely punctate lateral part of the surface; elytra very moderately narrowed from base to apex, dehiscent near the latter in the female, three-fifths longer than wide (♂) to three-fourths (♀), with rather coarse and close, impressed, rugose punctures, becoming fine and sparse basally, the raised lines feeble, more distinct in the male; sterna densely pubescent though as usual more conspicuously in the male; tarsi nearly as in the preceding. Length (♂) 31.0, (♀) 36.5 mm.; width (♂) 12.6, (♀) 13.0 mm. Mexico (Ciudad de Durango) **aztecus* n. sp.

Form very stout, oblong-subparallel, moderately convex, piceous-black, the abdomen piceo-rufous, strongly shining; head small, rather narrower behind than across the eyes, the latter moderately convex, separated by fully twice their width; antennæ (♂) stout, dark brown, tapering very gradually and but slightly, extending to apical third of the elytra, the joints strongly biserrate from a dorsal viewpoint, the oblique lower lobe sinuate only toward the inner side of the apex, the outer oblique projection strong, the fifteenth joint twice as long as wide, a little longer than the preceding, compressed, with a strong projection on its inner face near the base; prothorax very short, not quite three times as wide as long, the apex feebly, subevenly sinuate, the base distinctly lobed medially, the teeth distinct, finely acute, the punctures numerous, fine and strong, but little larger laterally; scutellum semicircular; elytra barely one-half longer than wide, the sides parallel, broadly arcuate, converging a little apically; punctures fine, sparse, the surface becoming coarsely impresso-

rugose apically, the marginal groove continuing around the apices to the suture, the raised lines obsolete; prosternum distinctly and closely, the metasternum very conspicuously, pubescent; middle tarsi finely grooved, the groove entire. Length (♂) 30.0 mm.; width 15.0 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend.

**curticollis* n. sp.

- 4—Male piceous-black, with the elytra dark castaneous, narrow in form, convex, rather shining, the head moderate, much narrower behind than across the eyes, the latter notably convex, separated by somewhat less than three-fifths their width; antennæ extending three-fifths from the elytral base, moderately stout, slightly tapering, the joints differing very much from those of the preceding species, not being divaricately biserrate, the sixteenth joint in one specimen, or seventeenth in another, moderate in size and extremely irregular; prothorax very nearly as in *laticollis* in form, great transversality and size, the teeth very moderate but acute, the hind angles right, not prominent, strongly punctate laterally; scutellum ogival; elytra about a sixth wider than the prothorax, two-thirds longer than wide, the sides distinctly converging and broadly arcuate from base to the moderately broad, conjointly rounded apex; punctures rather large, deep, somewhat close-set and conspicuous, finely substellate in contour, becoming fine near the base, the raised lines feeble; sterna conspicuously pubescent, the tarsi slender. Female differing greatly from the male in its stouter, parallel and suboval form, more shining surface, finer and sparser elytral punctures and very short and slender antennæ, which are but little more than two-fifths as long as the body; the elytra are more individually rounded at tip and the sterna much less pubescent. Length (♂) 28.0–31.0, (♀) 36.0 mm.; width (♂) 10.5–12.0, (♀) 14.5 mm. Indiana. *diversus* n. sp.

A—Nearly similar to the preceding but with much narrower prothorax and very much more rapidly tapering elytra from base to the much more narrowly rounded apex; head, eyes and antennæ nearly similar; prothorax much less transverse, the teeth still smaller, the anterior and middle still less widely separated, the hind angles more prominent, sometimes decidedly acute; elytra longer, three-fourths longer than wide, more than a fourth wider than the prothorax, more shining, the punctures as large but much less close and shallower, the raised lines stronger, the two inner conspicuous, the external nearly obsolete. Length (♂) 30.0–31.5 mm.; width 12.0–12.5 mm. North Carolina (Southern Pines),—A. H. Maneé.

cuneatus n. subsp.

- 5—Eyes approximate, separated by a third of their own width; color dark red-brown throughout, the elytra strongly sculptured. Body oblong, subparallel, moderately convex, somewhat shining though not strongly; head moderate, narrower behind than across the eyes, which are large and notably convex; antennæ (♂) rather stout, somewhat fusoid, long, extending to apical fifth of the elytra, the last joint extremely irregular, composed of at least two amalgamated joints; oblique apical lobes of the joints long and much developed but not serrate at the sides from above as they are in *curticollis* and

to a less degree in *aztecus*; prothorax but little more than twice as wide as long, the two anterior teeth small, the basal angles right, feebly upturned and obtusely subprominent; punctures fine and sparse, but little larger laterally; base broadly, feebly arcuate medially, the sublateral sinuses rather deep; scutellum very obtuse; elytra barely three-fifths longer than wide, about a third wider than the prothorax, parallel, with but feebly arcuate sides which converge but very slightly near the broadly obtuse apex; punctures rather large, deep, impressed and stellate, close-set posteriorly, smaller and sparser basally, the raised lines fine but distinct; sterna densely pubescent; abdomen glabrous and yellowish, the apical margin of all the segments very finely piceous; tarsi slender. Length (σ^7) 34.0 mm.; width 13.3 mm. New York. [*Cerambyx imbricornis* Linn., —Syst. Nat., ed. XII, p. 622].....**imbricornis** Linn.

A—Much smaller and relatively narrower though similar in coloration and sculpture, the antennæ (σ^7) less elongate, extending but slightly behind the middle of the elytra; prothorax similar but much shorter, two and one-half times as wide as long, the hind angles less blunt but not prominent; elytra more than three-fourths longer than wide, about a fourth wider than the prothorax, similarly parallel, the two inner raised lines stronger; tarsi still more slender, the posterior more lineiform, with the second joint subparallel and twice as long as wide. Length (σ^7) 27.5 mm.; width 10.0 mm. A single male without indication of locality.

mimus n. subsp.

B—Form nearly as in *imbricornis*, very parallel though narrower, similar in color but with coarser and much stronger elytral sculpture; antennæ (σ^7) extending to apical fourth of the elytra; head small; prothorax still shorter than in *mimus*, more nearly three times as wide as long, the median tooth relatively longer and very acute, the anterior smaller and only obtusely prominent, the sides behind the middle tooth more converging to the basal angles, which are right and not everted though very sharp; lateral sinuses of the base much shallower than in either of the preceding; elytra nearly three-fourths longer than wide, more than a fourth wider than the prothorax, very parallel, rapidly rounding at apex, the latter very obtusely rounded; punctures notably large, deeply impressed, rather close but irregular, smaller basally, the surface more shining than in the two preceding, the two inner raised lines strong; hind tarsi very slender, the pads beneath as in other forms of this subgenus, much narrower and less dense than in *Prionus* proper, the sulcus relatively wider. Length (σ^7) 25.0 mm.; width 9.6 mm. North Carolina (Southern Pines),—Manee.

brunneus n. subsp.

Eyes much more distant, separated by three-fifths to nearly three-fourths their own width; head black, rufescent anteriorly, the prothorax dark testaceous, the elytra much less strongly sculptured and of a pale tawny-yellow color, sometimes feebly rufescent basally. Body narrow, small in size, the elytra evidently narrowed from base to apex, with feebly arcuate sides and not parallel or nearly so as in the three

preceding; antennæ (♂) similar, extending to about apical third of the elytra, rather less stout; prothorax short, much more than twice as wide as long, nearly as in *brunneus*; elytra four-fifths longer than wide, nearly a third wider than the prothorax, the punctures well separated, usually rather small and feeble, sometimes moderately coarse but never so conspicuous as in the preceding forms; hind tarsi very slender, the second joint of the posterior narrowed slightly from apex to base, rather more than twice as long as wide. Length (♂) 21.0–25.0 mm.; width 8.2–9.4 mm. Indiana, Missouri and Kansas. Seven homogeneous examples, the female unknown. [*P. debilis* Csy.,—Ann. N. Y. Acad. Sci., VI, 1891, p. 21].

debilis Csy.

The anterior margin of the prothorax is broadly but rather deeply sinuate in *townsendi*, the sinus very feebly trisinate as stated by Bates in defining *mexicanus*, but the hind margin is broadly and feebly arcuate. In *aztecus* the anterior margin is more feebly sinuate from side to side, as is also the case in *curticollis*, but the hind margin is very feebly arcuate in the former and rather strongly medially lobed in the latter. All three of these species differ greatly from *flohri* and *mexicanus* in the feebler sculpture and in the 15-jointed, not 14- or 13-jointed antennæ as described of the latter by Bates, and this Mexican group as a whole differs decisively from the *diversus* and *imbricornis* groups in the relatively more abundant females which have also longer antennæ, fewer antennal joints, less slender hind tarsi and several other general differential characters.

Group III.

Subgenus *Antennalia* nov.

This group is given subgeneric rank, not solely because of the large and very complex, closely imbricated male antennæ, which could very well be considered a simple development of the preceding types, but because of the distinctly different structure of the female antennæ, the outer joints being transverse and bilaterally symmetrical. There seems to be but one species, though several forms represented in my collection by the female alone, which may be held to be subspecific for the present though possibly of higher value, are appended. The preceding group is characterized in one way by the relative scarcity of the females, while here this condition is reversed, the male being apparently much rarer than the female, denoting perhaps a difference in life habits of the two groups.

Body oblong, moderately stout and convex, somewhat shining, castaneous in color; head rather small, narrowed behind the large convex eyes, which are separated by a third (σ^7) to four-fifths (♀) their width; antennæ (σ^7) extending to apical third of the elytra, stout, the closely imbricated joints very short, rather rapidly narrower only at apex; prothorax small, much more than twice as wide as long, formed nearly as in *debilis*, except that the median tooth is at and not before the middle of the sides, the hind angles more externally prominent and acute and the apex more transverse, with a small sinus near each side, finely, sparsely punctate, very coarsely and unevenly at the sides; scutellum bluntly ogival at tip; elytra (σ^7) three-fifths longer than wide, fully a third wider than the prothorax, the sides distinctly converging from base to the obtusely rounded apex and feebly arcuate, the punctures large and well separated but shallow and unevenly impressed, the raised lines feeble and very obtuse; sterna all densely pubescent; tarsi long and very slender, the pads beneath denser than in *imbricornis* and with a narrower sulcus; in the female the elytra are parallel, with more strongly and subevenly arcuate sides, and the antennæ are slender, extending not quite to basal two-fifths of the elytra and they are 23- or 24-jointed, the outer joints small and bilaterally acute. Length (σ^7) 31.0, (♀) 26.0 mm.; width (σ^7) 12.0, (♀) 11.0 mm. Texas and Colorado. The Colorado female possibly does not belong to the Texas male, being much smaller and of different shape, but the prothorax is identical in form, differing much in this way from either of the varieties given below. [*P. fissicornis* Hald.,—Proc. Acad. Phila., III, p. 125]..... **fissicornis** Hald.

A—Form more slender than in the preceding and much darker in color, black or faintly piceous-black, the abdomen feebly rufescent, the legs and antennæ blackish-brown; surface very shining; head notably small, very much narrower behind than across the eyes, which are very convex and separated by three-fourths their width, the antennæ (♀) slender, with the basal joint rather stout as usual, not extending behind basal third of the elytra, 22-jointed; prothorax nearly twice as wide as the head, much more than twice as wide as long, not subparallel as in the preceding but gradually angulate to the middle of the sides from just before the prominent acute basal angles and just behind the small and obtuse apical teeth; elytra parallel, with evenly and distinctly arcuate sides, much shorter than the abdomen, less than three-fifths longer than wide, at the middle two-fifths wider than the prothorax, the punctures rather large but feebly impressed, everywhere widely separated, the two inner raised lines distinct; sterna subglabrous as in the preceding female; tarsi more slender, almost filiform, the pads beneath very slender and rather thin. Length (♀) 27.0 mm.; width 10.4 mm. Texas..... **parviceps** n. subsp.

B—Form stouter, much larger, similarly parallel, more oblong, the head and prothorax very much more developed, similar to *parviceps* in coloration, in the shining lustre and sparse though large elytral punctures, the surface becoming more rugose apically; head moderate, nearly three-fifths as wide as the prothorax, the

eyes separated by very nearly their own width, the antennæ (♀) slender, extending barely beyond basal fourth of the elytra, 20-jointed; prothorax very large, much more than twice as wide as long, convex, finely, sparsely punctate, coarsely and irregularly toward the sides, the latter parallel, but very slightly angulated well before the middle, the angle even obtusely subprominent and not spiniform, the anterior right, not rounded, moderately projecting, the basal angles right, rather blunt, not prominent; elytra parallel, narrowing slightly behind the middle, but little more than one-half longer than wide, only about a fifth wider than the prothorax, the raised lines very feeble; abdomen concolorous, black or nearly so; tarsi slender though less so than in *parviceps*. Length (♀) 32.0 mm.; width 13.0 mm. Texas.

transversus n. subsp.

In this group the eyes seem to be much more widely separated in the female than in the male, a feature not particularly evident in the other groups. The difference in form of the head and prothorax of *parviceps* and *transversus* is extreme, and I have but little doubt that they are specifically different. The female above attached to the male representative of *fissicornis* is probably different at least subspecifically. In the type of *transversus* the twelfth and thirteenth joints of both antennæ are completely amalgamated on the upper surface, without trace of suture,—a singular malformation. In the male of *fissicornis* the longitudinal impression of the elytra at outer third is very pronounced but it is shallow or obsolete in the three females described.

The Japanese *insularis* Mots., resembles somewhat our species of the *popularis* type, but the antennæ of the male are longer, extending almost to the end of the elytra; they are only very moderately stout, feebly tapering and not imbricate though serrate; my two males represent two subspecies, one with very short prothorax and eyes separated by but little more than a fourth their width, and the other with larger head, less transverse prothorax and eyes separated by three-fifths their width; there are also other very evident differences.

Prionina n. gen.

The few species constituting this genus differ from *Prionus* in two essential characters affecting the antennæ and tarsi. The outer joints of the antennæ, presumably in both sexes but certainly in the male, are less compressed and have their dull and chagrined surfaces even and wholly devoid of the longitudinal anastomosing

raised lines, so constantly present in *Prionus*. The hind tarsi are very much shorter than in that genus, and the basal joint beneath is not channeled but broadly concave and loosely pubescent throughout its extent. The lateral teeth and glabrous surface of the prothorax are as in *Prionus*, and the anterior tooth is no more prone to become extinct than in such forms as *Prionus kempi*, *curticornis* and *brunneus*, for example. Our two known species may be distinguished as follows:

Color black, the legs and antennæ also deep black; surface convex, only moderately shining; head moderate though larger than in the following species, narrowed at base, the eyes moderate, rather convex, separated by three-fifths their width; antennæ (♂) extending slightly beyond the middle of the elytra, only moderately thick, the last joint much compressed, as long as the preceding and a little narrower, evenly oval, narrowed at base, twice as long as wide; last maxillary palpal joint two-fifths longer than the preceding; prothorax scarcely more than twice as wide as long, notably convex, more shining than the elytra, finely, rather sparsely but deeply punctate, more closely but only a little more coarsely toward the sides, the anterior and middle teeth acute and rather well developed, the latter slightly the more prominent, the basal angles right, rather blunt, not prominent; scutellum moderate, rather obtuse; elytra one-half longer than wide, fully a third wider than the prothorax, the sides notably converging and barely at all arcuate from base to the obtusely rounded apex, not dehiscent, finely, feebly and sparsely punctate and feebly, irregularly rugulose, the raised lines feeble; sterna conspicuously pubescent; abdomen picescent, slightly pubescent basally; tarsi short, notably broad. Length (♂) 26.5 mm.; width 10.8 mm. New Mexico (Albuquerque). [*Prionus palparis* Say, —Journ. Ac. Phila., III, p. 327].....**palparis** Say

Color evenly red-brown, moderately convex, rather shining throughout; legs concolorous, the antennæ paler and more ochraceous; head moderately small, the tempora parallel and feebly, evenly arcuate, fully as wide across the middle of the latter as across the eyes, which are notably small, transverse, feebly convex and separated by one-half more than their own width; palpi slender, pale, the last joint fully one-half longer than the preceding; antennæ (♂) but moderately thick, feebly diminishing and only very moderately compressed distally, extending three-fifths from the elytral base, the last joint very evenly oval, obliquely narrowed basally, its faces even and convex, twice as long as wide, about as long as the preceding; angles and edges of all the joints obtuse and rounded; prothorax evidently more than twice as wide as long, moderately convex, glabrous, punctured sparsely but rather strongly as in *palparis*, the surface tumescent on the median line at apex, and with the oblique arcuate sublateral impression and tumidity behind the middle distinct; median teeth well developed, acute and spiniform,

much more prominent than the anterior, which are small and obtusely blunt though evident, the basal angles right, distinct; scutellum evenly and broadly ogival; elytra three-fifths longer than wide, somewhat dehiscent apically, barely a third wider than the prothorax, the sides rapidly converging and feebly arcuate from base to the somewhat narrowly obtuse apex; punctures rather fine and sparse but distinct, the surface smoother and more shining than in *palparis*, the raised lines very feeble; sterna much less pubescent, the tarsi short, moderately stout. Length (♂) 22.5 mm.; width 9.0 mm. Kansas.....**simplex** n. sp.

Both of these species are rather rare and known as yet only by the male. LeConte left *palparis*,—which has come to be erroneously recorded as “*palpalis*” in our lists—with *Prionus*, though noting the radically different sculpture of the antennæ; he however failed to note the different form of the tarsi, which, with the structure of the maxillary palpi, renders a separate genus necessary.

Homæsthesis Lec.

This genus was proposed by LeConte to receive his *Prionus integer*, as well as the *Prionus emarginatus* of Say; it is the only one of our Prionini in which the pubescent pronotum appears, so far as known, but probably there are also glabrous forms, judging from the negative evidence of failure to mention any dorsal vestiture in the descriptions of *integer* and *Prionus innocuus*. The species may be distinguished among themselves as follows:

- Prothorax with a tooth at the sides, the angles all obtuse, the tooth generally well before the middle.....2
- Prothorax without trace of median tooth, the sides smoothly rounded at or before the middle.....3
- 2—Pronotum without distinct pubescence; color piceous; prothorax finely punctulate, narrowed anteriorly, the sides unidentate at the middle, the posterior angles subobtuse; elytra sparsely, rugosely punctate; antennæ (♂) 13-jointed, stout, strongly imbricate, the last joint complex, as though formed by two connate joints, the inferior lobes of the joints slightly sinuate. Length 24.0 mm. Colorado (near Pike’s Peak). [*Prionus integer* Lec.—Journ. Acad. Phila., ser. 2, II, p. 107].....**integra** Lec.
- Pronotum pubescent; color castaneous, shining; head, pronotum and sterna clothed with long flavo-ferruginous hair, densely punctate; antennæ 14-jointed, glabrous, perfoliate, imbricate, the inferior lobes emarginate; mandibles black at tip; prothorax but slightly margined at the sides, where there is a single tooth at or before the middle, the angles obtusely rounded; elytra somewhat uneven, punctured; female glabrous, with simple antennæ. Length (♂, ♀)

- 17.5–20.0 mm. Upper Arkansas River,—Say; near Long's Peak,—LeConte. [*Prionus emarginatus* Say,—Journ. Acad. Phila., III, p. 327].....**emarginata** Say
- 3—Prothorax very short, nearly three times as wide as long; body very stout, rufo-piceous, shining, the eyes in size nearly as in *integra*; prothorax moderately punctate, with all the angles well rounded, the sides rounded, slightly undulated; elytra almost one-half wider than the prothorax,—“*brevioribus*” of the description evidently a misprint for *latioribus*,—about one-half longer than wide, rather strongly punctured, the apices individually rounded; antennæ 13-jointed. Length (♀) 22.5 mm. New Mexico,—Ulke. [*Prionus innocuus* Lec.,—Proc. Acad. Phila., 1862, p. 43]...**innocua** Lec.
- Prothorax scarcely more than twice as wide as long; body not relatively stout.4
- 4—Body pale yellowish-brown in color throughout, the legs and antennæ concolorous; surface strongly shining; head very small, much narrowed behind the eyes, the tempora converging and arcuate to the base; eyes moderate, notably convex, separated by about a fourth or fifth more than their width; antennæ (♂) moderately stout, strongly imbricate, the lower lobes of the joints deeply emarginate, extending to about the middle of the elytra, 13-jointed, the last joint elongate-oval, much longer than the preceding, with a pointed tubercle on the inner face, as though the joint had originated by an amalgamation of two joints; maxillary palpi slender, very pale, the last joint nearly one-half longer than the preceding; prothorax small, rounded medially at base, truncate at apex, very broadly and evenly rounded at the sides, without trace of inequality, widest but little before the middle, narrowed anteriorly, with the angles very obtuse and rounded, the basal angles broadly rounded; surface moderately convex, rather finely, densely punctate and with long pale hairs throughout, the latter also present at the base of the head and on the posterior part of the interocular surface; scutellum large, very obtuse; elytra three-fifths longer than wide, one-half wider than the prothorax, gradually dehiscent from basal third, the sides parallel, arcuately converging in apical two-fifths, the apices rather narrowly and obliquely rounded, the sutural angles only feebly prominent; punctures coarse, impressed, somewhat close and irregular, the surface rugulose but shining, the raised lines barely observable; sterna densely punctate and pubescent; legs moderate, the tarsi very long, slender, the posterior more than three-fourths as long as the tibiæ, with sparse bristling hairs and two very fine tomentose lines beneath. Length (♂) 21.0 mm.; width 8.8 mm. Colorado.
- pubicollis** n. sp.
- Body narrower and more elongate, very dark castaneous, the legs concolorous, the antennæ a little paler, shining; head very small, scantily pubescent, in form as in the preceding but with the eyes separated by not quite their own width; antennæ (♂) and palpi similar, the last joint of the former less elongate and with the protuberance well beyond the middle; prothorax similar but more coarsely and sparsely punctate, the pubescence not so long and far less close, differing

also in being subsinuately parallel from base to apical third, where the somewhat protuberant sides are very evenly rounded, without trace of denticle; scutellum similar; elytra longer, two-thirds longer than wide, one-half wider than the prothorax, not dehiscent, the sides distinctly converging and feebly arcuate from the humeri to the apex, which is conjointly rather narrowly and subcircularly rounded, the punctures coarse and rather shallow as in the preceding though much less close-set; tarsi very slender, much shorter, the posterior scarcely two-thirds as long as the tibiæ. Length (♂) 21.5 mm.; width 8.8 mm. Colorado,—J. F. Kemp. . . . *debiliceps* n. sp.

It is assumed, as intimated above, that the pronotum of the male type of *integra* is glabrous, by which character it differs from the male of any other known species. According to Say, the dense pubescence of the male pronotum of *emarginata* is wanting in the female, but even this statement apparently lacks any more recent verification. Admitting this sexual disparity in the thoracic pubescence however, I do not think that *innocua* Lec., can be the female of *emarginata*, as conjectured by LeConte, because there is no indication of sexual differences in the lateral teeth of the prothorax anywhere among our other Prionini. It is for this reason that I assume without hesitation that *pubicollis* is distinct from *emarginata*, though having the same long dense pronotal vestiture, because the broadly rounded sides of the prothorax afford not the slightest suggestion of the lateral submedian tooth of *emarginata*, which is so pronounced as to have been especially mentioned by both Say and LeConte and plainly evident in the drawing of that species given by LeConte in his paper on the Coleoptera of Kansas. There is evidence that the species of *Homæsthesis* are rather numerous though very rare in individuals, and, as *dibiliceps* is widely different from *pubicollis*, this is all the more reason for believing that the type of *pubicollis* is not in any way an aberrant example of *emarginata*.

I have been unable to find any decided differences in the separation of the hind coxæ, such as mentioned by LeConte (Class. Col. N. A., p. 274) in the case of certain females, anywhere among our Prionini. The coxæ may vary slightly in distance asunder but the intercoxal process always has the same acutely angulate form. Perhaps the remark applies wholly to the genus *Homæsthesis*, of which I have not seen the female, this also being true of *Prionina*, which is closer to *Homæsthesis* than to *Prionus*.

Tribe PÆCILOSOMINI.

Pyrodes Serv.

The following species is allied to *marginatus* White:

***Pyrodes cervicalis** n. sp.—Male moderately narrow and feebly convex, densely sculptured and but feebly shining, obscure viridi-cupreous, the elytra obscure green, frequently suffused with obscure cupreous, the side margin narrowly and inconstantly brighter cupreous, the suture and base never cupreous, concolorous; head much longer than wide, broadly and very deeply furrowed, obsolescently and narrowly toward base; tempora parallel, nearly straight, twice as long as the eyes and a little less prominent; antennæ a fourth longer than the body, slender, the third joint almost as long as the next two combined, obsolete and not densely sculptured; prothorax, excluding the spine, slightly less than twice as wide as long, the truncate base and apex equal; sides sinuously diverging from the apex to the apex of the very acute lateral spine, slightly behind the middle, thence still more sinuous and converging to the base; surface coarsely, confusedly punctate, broadly and feebly impressed medially; scutellum moderate, as long as wide, pointed, finely and variably sculptured, subglabrous, with a fine median stria; elytra three-fifths to three-fourths longer than wide, gradually narrowed from base to the obtusely rounded apex, one-half wider than the prothorax, excluding the spines, the surface even, densely, subvermicularly puncto-rugose; humeri widely exposed at base and rather prominent; under surface cupreous, the abdomen brighter and more polished. Female wanting. Length 23.5–27.0 mm.; width 8.2–9.6 mm. Honduras. Four specimens.

Differs from *marginatus* in the absence of cupreous elytral margins, except very finely and inconstantly externally, and in the cupreous under surface, among other characters. The fifth ventral is shallowly but sharply sinuate medially at apex.

Subfamily CERAMBYCINÆ.

Tribe ASEMINI.

In this tribe and in some genera of the Callidiini as well, though not so evidently in most of the latter, the second antennal joint is remarkably developed in a relative sense, sometimes being not so very notably shorter than the third; this is a highly distinctive character in this part of the Cerambycinæ, though reappearing in some Clytids and several Lepturids, isolating the Asemini among the other tribes in this vicinity. The genera are few in number and not very strongly accentuated.

Asemum Esch.

Distinguished among the Asemini very clearly by the small, deeply emarginate and very finely faceted eyes and unusually short antennæ; the male has the fifth ventral very broadly arcuato-truncate at tip, exposing the sixth, while in the female it is strongly rounded, concealing the latter segment. Our species have never been carefully investigated but are rather numerous, those in my cabinet being definable as follows:

- Pronotum with the median line not finely striiform, except sometimes centrally. 2
- Pronotum with a fine substriiform median line, feebly impressed and extending from the apical margin nearly to the base. 9
- 2—Sculpture of the pronotum very fine, dense and confused, the granules seldom very distinct. Eastern species. 3
- Sculpture much less dense, the granules larger, always isolated, with the interspaces shining. Western species. Comparative descriptions drawn from the female throughout. 6
- 3—Elytra in both sexes distinctly more than twice as long as wide, covering the entire abdomen in the female or very nearly. 4
- Elytra materially shorter, not or scarcely more than twice as long as wide, leaving the entire last dorsal segment exposed in the female. . . 5
- 4—Form parallel, moderately convex, dull, dark brown to nearly black; pubescence very short, rather abundant, palish; head three-fifths as wide as the prothorax, densely sculptured; antennæ short and stout, the pubescence abundant, rather long, pale and conspicuous, fifth joint rather more swollen, sixth shorter than the seventh and very much shorter than the fifth; prothorax one-half wider than long, evenly arcuate at the sides or very faintly subangulate, more or less impressed centrally and not at all or very faintly at each side of the middle; scutellum well developed, dull, very densely punctate and evidently pubescent; elytra parallel, abruptly obtuse at apex, wider than any part of the prothorax, faintly and obtusely substriate, the intervals feebly convex, the alternate ones a little more strongly; punctures fine, very dense throughout, the surface very dull; under surface shining, finely, not densely punctate and with short pale hairs; hind tarsi short, rather slender, the first joint as long as the next two, second one-half longer than wide, the third cleft almost to the base. Length (♂, ♀) 13.0 mm.; width 3.8-4.0 mm. Pennsylvania. [*A. mæstum* Hald.,—Tr. Am. Phil. Soc., X, p. 35; *obsoletum* Hald.,—(l. c.); *brunneum* Hald.,—(l. c.); *substriatum* Hald.,—l. c., p. 36—Massachusetts]. **mœstum** Hald.
- A—Characters similar to the above, except that the prothorax is dilated, being a little wider than the base of the elytra. [*A. juvencum* Hald.,—l. c., p. 36]. **juvencum** Hald.
- Form nearly as in *mæstum* but more slender and with the sides of the elytra converging perceptibly from about apical third, the apices less obtuse; color piceous-black, dull, the prothorax slightly rufescent;

- head very densely punctate; antennæ (♂) fully one-half as long as the body, slender, black, moderately pubescent, the second joint one-half longer than wide and nearly three-fourths as long as the third, fifth scarcely swollen, sixth very much shorter and also distinctly shorter than the seventh, tenth one-half longer than wide; prothorax nearly as in *mæstum* but not impressed; scutellum as in the preceding; elytra finely, extremely densely punctate and opaque, the usual costulation feeble; under surface shining, finely but rather closely punctulate and distinctly puberulent; hind tarsi nearly as in *mæstum* but more slender. Length (♂) 12.0 mm.; width 3.6 mm. Wisconsin (Bayfield),—Wickham. **gracilicorne** n. sp.
- 5—Form stouter than in *mæstum*, deep black throughout, rather dull; head small, densely punctate; antennæ (♀) moderately stout, extending a little beyond the base of the elytra, the pubescence moderate but very stiff, dark fulvous, last six joints abruptly shorter as usual and gradually diminishing to the tenth; prothorax well developed, almost as wide as the elytra, more than one-half wider than long, evenly rounded at the sides and more narrowed basally than apically, the apex broadly, evenly sinuate; surface even, becoming broadly concave medially but not toward apex, the granules very small and everywhere dense; scutellum subquadrate, shining, rather sparsely punctate; elytra parallel, arcuately narrowing in about apical fourth, the apices not very obtuse; surface minutely and closely punctate, much more finely and rather less closely than in *mæstum*; under surface shining and punctulate; hind tarsi slender, nearly as in the preceding but black. Length (♀) 14.0 mm.; width 4.3 mm. Lake Superior (locality unrecorded). **ebenum** n. sp.
- Form a little narrower than the preceding, much smaller in size and more shining, deep black throughout; antennæ (♀) similar but a little longer, extending to basal fourth of the elytra; prothorax smaller, much narrower than the elytra and less transverse, not quite one-half wider than long, less broadly rounded and almost angulate at the sides behind the middle, truncate and not sinuate at apex, more coarsely and confusedly sculptured, evenly convex, the median line just visibly and narrowly impressed centrally; scutellum smaller, much less obtuse, broadly pointed at tip, similarly shining and loosely punctate; elytra arcuately narrowing more abruptly in apical fourth or fifth, rather shining, the punctures very fine and distinctly separated, unusually rough, the two median costules strong, the intervals confusedly and coarsely undulato-rugose; under surface shining, similarly punctulate but with the hairs still shorter, finer and less distinct. Differs distinctly from *ebenum* in the form of the exposed last dorsal segment, which is here nearly twice as wide as long, evenly rounded, with the surface ovally impressed at each side; in *ebenum* this segment is about as long as wide, very much more narrowly rounded, with the lateral impressions very much longer. Length (♀) 11.0 mm.; width 3.3 mm. Wisconsin (Bayfield),—Wickham. **curtipenne** n. sp.
- Form, color and sculpture nearly as in *mæstum* but very much shorter, piceous-brown, dull; vestiture even, rather close, short and coarse;

head deeply and closely punctured; antennæ (♂) moderately thick, filiform, extending about to the middle of the body, coarsely, densely sculptured, brown, black at base, the second joint two-thirds as long as the third, which is slightly longer than the fourth, fifth one-half longer than the fourth but not thicker, tenth two-fifths longer than wide, the last rather abruptly narrowed and rapidly pointed in nearly apical half; prothorax two-fifths wider than long, slightly swollen at the sides behind the middle, thence rapidly narrowing to the base which is much narrower than the apex, unimpressed, rather strongly, densely, vermicularly rugose, more finely medially; elytra about a fourth wider than the prothorax, scarcely twice as long as wide, parallel and straight at the sides, abruptly rounding and very obtuse at apex, not very finely, extremely densely punctate, the raised lines as in *mestum*; fifth ventral shorter than the fourth, rounded. Length (♂) 9.5 mm.; width 3.0 mm. Massachusetts (Wellesley),—Frost.

amputatum n. sp.

6—Color black or piceous-black throughout.....7
Color black, the elytra more or less pale brown.....8

7—Body rather stout and of somewhat larger size than any of the preceding, black, feebly shining; head similar but not quite so densely punctate; antennæ (♀) black, gradually dark brown distally, moderately slender and pubescent, extending to about basal fifth of the elytra, the fifth joint much longer than the fourth or sixth, which is rather longer than the seventh, tenth fully three-fourths longer than wide; prothorax well developed though distinctly narrower than the elytra, barely one-half wider than long, the sides subangularly swollen well behind the middle; surface convex, with a rounded central impression and two or four which are more lateral and sometimes obsolete; scutellum finely, densely punctate; elytra ample, entirely covering the abdomen, parallel, arcuately narrowing in nearly apical third, finely, very closely but not densely punctate, the intervals generally subequally and feebly costuliform, shining under surface minutely, not closely punctate, with the hairs rather longer, coarser and more distinct than usual. Length (♂, ♀) 13.0–15.0 mm.; width 4.2–5.0 mm. Washington State to Nevada and Utah. [*A. atrum* Esch.,—Bull. Mosc., II, p. 66]. . . **atrum** Esch.

Body much smaller and more slender, rather strongly shining and very deep black throughout; head more densely punctured medially; antennæ (♀) unusually small, slender, but little longer than the head and prothorax, black throughout, of the usual structure but with the outer six joints less considerably shorter than the fifth than in the preceding; prothorax rather less than one-half wider than long, widest and strongly rounded at the sides at or very near the middle, and not posterior thereto as in the preceding, feebly impressed medially and with a very faint impression at each side of the medial sufficiently evident, the granules unusually large and conspicuous, the general surface polished; scutellum rounded, shining, finely and loosely punctate; elytra more than twice as long as wide but exposing the very narrow and subtruncate last dorsal, not wider than the prothorax, very minutely and closely but not densely

punctate, the punctures isolated over a rather shining surface, the two ridges strong, the intermediate broadly prominent and rugose; abdomen as in *atrum*; hind tarsi short and very slender, the second joint twice as long as wide. Length (♀) 10.0 mm.; width 2.8 mm. Colorado (Boulder Co.).....**parvicorne** n. sp.

- 8—Form rather stout, unusually large in size; head strongly and closely punctate, rather impressed centrally; antennæ (♀) extending to basal fifth of the elytra, not very stout, pale brown, moderately pubescent, the hairs pale yellowish, the tenth joint more than twice as long as wide, the process of the eleventh unusually short, not half as long as the basal part; prothorax one-half wider than long, distinctly narrower than the elytra, the sides bluntly angulate only just behind the middle; surface very convex, with an unusually large and deep central concavity occupying about median fourth of the width, the granules coarse, strong and isolated on the shining surface; scutellum black, broadly rounded at tip, closely punctate; elytra slightly more than twice as long as wide, parallel, arcuately narrowing in about apical fourth, the apices very obtuse, exposing the last dorsal, which is as long as wide, obtrapezoidal with rounded tip, its surface very minutely, closely and clearly punctate on the pale background; two medial ridges and the sublateral all strong, the intermediate very feeble; abdomen deep black, punctulate as usual; legs black, pale distally, the hind tarsi nearly as usual. Length (♀) 15.5 mm.; width 4.8 mm. Wyoming (Laramie)....**fulvipenne** n. sp.

Form less stout and less convex, the elytra less pallid; head strongly, closely punctate, impressed along the median line; antennæ (♀) short but rather slender, of the usual form; prothorax short, rather more than one-half wider than long, parallel, the sides almost evenly and subcircularly rounded; surface shining between the isolated and very distinct granules, only moderately convex, feebly tri-impressed medially along a transverse submedian line; scutellum black, nearly as in the preceding; elytra parallel, barely visibly wider than the prothorax, finely, very densely punctate and rather dull, the ridges distinct; exposed last dorsal segment but little wider than long, its entire contour very evenly parabolic; abdomen castaneous, minutely, sparsely punctate but rather distinctly pubescent; tarsi as usual, darker than in the preceding species, from which the present differs in its much narrower form, shape of the last dorsal segment, less impressed and shorter, less convex prothorax and many other structural features. Length (♀) 13.0 mm.; width 3.8 mm. British Columbia (Aldermere),—communicated by Rev. J. H. Keen.

costulatum n. sp.

- 9—Form much narrower and more convex, black, the scutellum and elytra dark red-brown; head densely and deeply punctate, scarcely impressed; antennæ (♂) fully one-half as long as the body, black, slender, of the usual general structure and vestiture, the joints beyond the fifth abruptly shorter and still more slender, sixth and seventh equal, tenth more than twice as long as wide; prothorax convex, barely one-half wider than long, but slightly narrower than the elytra, angulate or more narrowly rounded at the sides just behind

the middle, very densely, somewhat confusedly granose, the surface very feebly tumescent at each side of the impressed median line in about median third of the length; scutellum longer than wide, broadly rounded at tip, densely punctate and dull throughout; elytra much more than twice as long as wide, finely, very densely punctate and dull throughout, the surface also coarsely and feebly rugose, the two median ridges strong, especially the inner, the intermediates feeble, the sublateral barely traceable and very fine; apex abruptly obtuse, covering the last dorsal segment; hind tarsi very slender, the basal joint a little longer than the next two, the second more than twice as long as wide. Length (σ^7 , ♀) 10.8–11.0 mm.; width 3.2–3.9 mm. Washington State.....**pugetanum** n. sp.

Form oblong and parallel, only slightly convex, black, the elytra very dark brown; head densely, not very coarsely punctate, concave medially; antennæ (σ^7) very short, stouter than in any other species, extending to basal sixth of the elytra, pale brown in color, rather conspicuously and pallidly pubescent, the second joint but little longer than wide, fifth one-half longer than the sixth, which is distinctly shorter than the seventh, tenth less than one-half longer than wide; prothorax one-half wider than long, distinctly narrower than the elytra, parallel, the sides broadly, subevenly rounded; surface feebly convex, shining, strongly and closely granose, not only impressed finely along the median line but with an oval impression at each side at lateral and basal fourth; scutellum wider than long, semicircular, finely punctate, differing from any other species in having an entire impunctate median line; elytra a little more than twice as long as wide, parallel, very obtusely rounded at tip, finely, very densely punctate and dull, the two median ridges distinct, the intervals rugose; last dorsal covered, broad and very broadly rounded at apex; abdomen shining, feebly punctulate, black, brownish apically; hind tarsi missing in the type. Length (σ^7) 12.8 mm.; width. 4.3 mm. Canada (Ontario).....**brevicorne** n. sp.

The species described by Haldeman (l. c., p. 36) under the name *fuscum*, I do not know; it is recorded as a synonym of *mæstum* in the Munich catalogue and seems to have dropped out of sight but may nevertheless be a distinct species, as it is only 8 mm. in length, testaceous, with the metasternum and hind coxæ piceous, the prothorax even and the elytra parallel, with obsolete elevated lines; it is described as inhabiting Pennsylvania and its size and peculiar coloration should permit of easy identification. *Substriatum* of Haldeman (l. c., p. 36), from Massachusetts, is recorded as a synonym of *mæstum* in the Munich catalogue and as a variety in the Henshaw list; it would seem from the published characters to be a much less distinct form than *fuscum*. The locality of *juvencum* Hald., is not stated. *Brevicorne* is an aberrant species

in antennal and scutellar characters, as well as in other directions, but is an *Asemum* without doubt, although the anterior coxæ are separated slightly.

The structure of the last dorsal segment of the abdomen, which is frequently exposed to view, is important in the differentiation of the species of *Asemum*, as there is surprising diversity in its conformation, thus affording very convenient characters.

Liasemum n. gen.

The species named *Asemum nitidum* by LeConte, has large and coarsely faceted eyes as in *Criocephalus* and it is therefore not an *Asemum*; it differs also in its basally very stout antennæ, which are formed as in *Asemum asperum* Lec., though more coarsely and not so closely pubescent. Its facies will not admit it to either of the genera mentioned and I therefore separate it generically under the above name, together with a second species recently discovered. It may be distinguished from *Criocephalus* by its very much shorter tarsi, which somewhat resemble those of *Asemum*. The anterior coxæ are separated as in *Criocephalus*, while in *Asemum* they are contiguous or with the process posteriorly very acute; in the aberrant *Asemum brevicorne* however, they become evidently though very narrowly separated.

Liasemum mokelumne n. sp.—Much smaller and narrower than *nitidum* but similarly shining, not deep black as in that species but blackish-piceous, still more rufescent beneath; head three-fourths as wide as the prothorax, finely, rather closely punctate, the median line not or only very feebly and finely impressed; antennæ (♀) short, extending to basal fifth or sixth of the elytra, formed as in *nitidum* but shorter and not quite so stout; prothorax as in *nitidum* but less transverse, scarcely a third wider than long, shining, finely and deeply punctate, loosely so medially, closely toward the sides, the median line faintly impressed for a short extent at the centre and more broadly near the base; scutellum subquadrate, broadly rounded behind, closely punctate but shining; elytra parallel, evidently wider than the prothorax, more than twice as long as wide, evenly and subcircularly rounded conjointly at apex, very finely, closely punctate, the two median raised lines feeble but evident, the inner very distinct, especially toward base, the intermediate ridges obsolete, except those between the raised lines and near the suture which are barely traceable; anterior coxæ evidently though not widely separated; hind tarsi short but slender. Length (♀) 12.5–14.5 mm.; width 3.5–4.0 mm. California (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Differs from *nitidum* not only in its paler color and other char-

acters stated above, but in the still smaller and more slender tarsi, shorter legs and other features readily observable. Of *nitidum* Lec., I have three very good specimens from Monterey, California; it extends thence far to the northward into Oregon.

Nothorhina Redt.

The species here described under this name are allied closely to *Criocephalus* and have similar large and coarsely faceted, emarginate eyes, but differ in the generally stouter antennæ, sometimes rapidly tapering distally and clothed basally with long and close-set erect pallid hairs, also in the shorter tarsi, thus lying between *Liasemum* and *Criocephalus* though very much closer to the latter. The general habitus of the body is similar to that of *Criocephalus* in every way. The species are more numerous than supposed and those in my cabinet are divisible into two strongly marked groups as follows:*

- Prothorax but slightly wider than long, with a large subquadrate median concavity; antennæ short, about one-half as long as the body, nearly similar in the sexes and notably stout basally. 2
- Prothorax transverse, without trace of a central subquadrate concavity; antennæ very much longer, sometimes scarcely shorter than the body. 3
- 2—Piceous-black, finely pubescent; head roughly punctate, the eyes large, deeply emarginate; prothorax shorter than wide, rounded, punctate, broadly excavated medially, the excavation not extending much before the middle, toward the sides with elevated asperate punctures; antennæ scarcely half as long as the body, rufescent basally. Length 17.5–22.5 mm. Oregon (Prairie Paso). [*Asemum asperum* Lec.,—Proc. Acad. Phila., 1854, p. 18]. **aspera** Lec.
- A—Similar to the preceding but having the pronotal concavity subquadrate in form, extending from near the base to apical third or even somewhat beyond and with a low obtuse tuberculiform swelling at its posterior limit at basal fourth of the pronotum; antennæ black basally, feebly picescent distally, evidently some-

* Further study indicates that the species here assigned to *Nothorhina* do not belong to that European genus, the type of which is a small insect with filiform antennæ and finely faceted eyes, but should merely constitute a section of the genus *Criocephalus*. Just why LeConte separated *Asemum asperum* from *Criocephalus* and placed it in *Nothorhina* I cannot surmise, except perhaps because of the peculiar pronotal concavity of that and allied species; but *spissicornis* has even more basally thickened and pubescent antennæ, associating it closely with *asperum* in that respect, while the prothorax is wholly different and of the usual form in *Criocephalus*. I am decidedly of the opinion that *Nothorhina* does not occur in America but leave the assignments as originally made for the time being.

what more than half as long as the body. Length (σ^7 , ♀) 18.5–19.5 mm.; width 4.6–5.5 mm. Colorado (Boulder Co.).

imprensa n. subsp.

B—Similar to *imprensa* but not quite so elongate, the pronotal impression similar but having the feeble tubercle, not at basal fourth of the pronotum, but just behind the middle of the length; antennæ shorter, barely half as long as the body; scutellum similarly impressed along the middle; elytra parallel, with very straight sides, the raised lines scarcely so evident; surface more shining, the punctures similarly very fine and close-set throughout. Length (σ^7) 16.8 mm.; width 4.5 mm. New Mexico (Cloudcroft),—Knaus.....*rectipennis* n. subsp.

3—Body larger and less slender, black, dull, the elytra blackish-brown; head large, fully four-fifths as wide as the prothorax, deeply canalliculate along the median line, extremely densely, not coarsely punctate, the large eyes feebly emarginate, separated by twice their width; antennæ (σ^7) nearly four-fifths as long as the body, the first five joints very stout and gradually stouter basally, joints six to eleven abruptly thinner and also gradually feebly tapering distad, the last but little longer than the tenth and not appendiculate; prothorax nearly one-half wider than long, parallel and evenly rounded at the sides, extremely densely, not very finely punctate throughout, with the broadly impressed median line laterally dilated anteriorly, the surface also feebly, transversely impressed before the base nearly throughout and with two large deep rounded discal impressions; scutellum finely, very densely punctate; elytra long, subparallel, but slightly wider at the humeri, rounded, not dehiscent and unarmed at apex, minutely, very densely punctate and with larger, rather close-set punctures intermingled, becoming obsolescent apically, the two discal raised lines distinct, the surface not otherwise uneven; hind tarsi (σ^7) two-thirds as long as the tibiæ, only moderately slender, the basal joint more than two-fifths of the entire length, second two and one-half times as long as wide, third a little longer than wide, cleft almost to the base, the under surface densely padded and with the usual fine glabrous canalliculation entire and equal. Length (σ^7) 19.5–20.0 mm.; width 5.0 mm. Colorado (Boulder Co.).....*spissicornis* n. sp.

A—Similar to *spissicornis* in its dull surface, fine dense sculpture and in all other features, except that it is narrower in form, with the elytra more tapering and dehiscent near the apex, the head a little smaller, the antennæ slightly longer, notably less thickened basally, though of similar proportion among the joints, the prothorax even shorter, not rounded but broadly medially angulate at the sides, the median line much more broadly impressed, the adjoining surface more longitudinally tumid and the discal cavities obsolete; fifth male ventral similar though a little less transverse, the truncate not quite so wide, less pubescent and more distinctly sinuate. Length (σ^7) 17.5 mm.; width 4.7 mm. Colorado (Boulder Co.).....*longicornis* n. subsp.

Body smaller, relatively much more slender and parallel, dark red-

brown throughout, sculptured as in *spissicornis* but still more finely; head relatively a little smaller, the very large eyes similar though still more prominent, separated by barely over one-half more than their own width; median line much more finely and feebly though evidently canaliculate; antennæ (♂) of the same structure and with similar dense erect vestiture but barely three-fourths as long as the body and less incrassate basally through the basal five joints, second joint relatively longer than in the preceding, twice as long as wide and distinctly more than half as long as the third, the latter less greatly exceeding the fourth; prothorax similarly transverse but differing notably in shape, not parallel, the sides rounding strongly at apex, thence parallel and nearly straight from apical fifth to barely behind the middle, then rounding and strongly converging to the base, which is very much narrower than the apex, the densely punctulate surface much more even, the impressions of the preceding barely traceable; scutellum more obtuse; elytra similarly a little wider than the prothorax, very elongate but not at all wider at the humeri, the sides straight, the apex conjointly circularly rounded; legs more slender and a little shorter, the hind tarsi not quite three-fifths as long as the tibiæ, similar in general structure but very much more slender. Length (♂) 16.7 mm.; width 4.2 mm. New Mexico (Las Vegas),—Meeske.....**gracilipes** n. sp.

It would seem as though the tuberculiform swelling at the hinder part of the thoracic impression of *impressa*, would have been alluded to by LeConte, even in the very short diagnosis of *aspera*, if present in the latter; it is conspicuous in *impressa* but almost obsolete and with much more anterior position in *rectipennis*.

Criocephalus Muls.

The following three species belong to the *asperatus* group, having the third joint of the hind tarsi emarginate only at apex:

***Criocephalus honduranus** n. sp.—Form, dark coloration and general sculpture nearly as in *asperatus* but less stout; head and antennæ nearly similar, except that the dense punctures of the former are finer and the basal dorsal swelling more pronounced, also in that the antennæ are a little longer and more coarsely sculptured, having the fringe along the under part of all the joints nearly as in the male of *asperatus*; prothorax distinctly different, being very nearly as long as wide, hexagonal, angulate at the middle, the surface with a large deep rounded concavity at the middle near the base, a deep elongate concavity enclosing a shining impunctate anterior spot near each side, and a transversely crescentic subapical concavity; surface minutely, extremely densely punctate but with only very few small and widely dispersed granules anteriorly, becoming but slightly more pronounced toward the sides; elytra nearly similar but with the raised lines more feeble; legs a little shorter but with notably longer tarsi, the posterior more than three-fourths as long as

the tibiæ, with the second joint distinctly more than twice as long as wide. Length (σ^7) 23.5 mm.; width 6.5 mm. Honduras.

Differs from *asperatus* in its much less transverse prothorax, less than half as asperate pronotum and much longer tarsi, also in having the eighth antennal joint only half as long as the seventh and proportionally thinner than in that species. This can hardly be the form alluded to by Bates (Biol. Cent.-Amer., Col., V, p. 239) from Chiapas, Mexico, as agreeing precisely with Nebraskan specimens of *asperatus*.

Criocephalus flitarsis n. sp.—Smaller and more slender than *asperatus*, similar in color and punctuation, black and rather dull throughout; head as in *asperatus*, except that the eyes are less transverse and less widely separated; antennæ (φ) shorter and more slender, otherwise nearly similar, the second joint just half as long as the third; prothorax smaller and less transverse, prominent and narrowly rounded at the sides well behind the middle, the sides thence but feebly converging, being almost parallel for a short distance, then broadly rounded to the apex, which is fully as wide as the base; surface not impressed medially, having a moderate shining impression near each side and a deep rounded pit medially near the base, having toward the sides a very few small and widely dispersed shining tubercles; elytra much wider than the prothorax, narrowed but very slightly from base to the circularly rounded apex, the sculpture as in *asperatus*, except that the sublateral raised line is also evident; legs shorter and much more slender, the hind tarsi extremely slender, two-thirds as long as the tibia, the second joint nearly three times as long as wide, the third almost twice as long as wide. Length (φ) 20.0 mm.; width 5.3 mm. Texas (El Paso),—Dunn.

This species differs greatly from the allied *asperatus* in its smaller size, slighter build, much less impressed and very much less asperate prothorax which has a different outline, the apex being narrower than the base in that species, and more particularly in the very slender tarsi and in the form of the fifth abdominal segment above and beneath, which is much narrower and relatively longer in *flitarsis*.

Criocephalus cavicollis n. sp.—Smaller in size than the preceding and with relatively smaller head and prothorax, nearly similar in its very dense punctuation and the raised lines of the elytra but somewhat more shining, dark piceous-brown throughout; head smaller, the median line only finely impressed, the eyes separated by over three-fourths more than their width; antennæ (σ^7) very slender, more than two-thirds as long as the body, the third joint fully twice as long as the second, the eighth about three-fourths as long as the seventh and only very slightly thinner; prothorax nearly one-half wider than long, the sides rather prominent but narrowly rounded well behind the middle, thence distinctly converg-

ing and nearly straight to just behind the apex, where they round rapidly to the latter, which is very nearly as wide as the base; surface with a very large deep concavity occupying almost its entire extent, the bottom of the concavity more deeply impressed medially and laterally and also transversely more impressed near its anterior border, not inclosing impunctate spots, the convex surface laterally with a few very small acute granules on the flanks behind the middle; elytra parallel, nearly two-fifths wider than the prothorax; legs unusually short, slender, the hind tarsi with the second joint more than twice as long as wide. Length (♂) 17.0 mm.; width 4.8 mm. Colorado,—Kemp.

Not closely allied to any other species. The exact locality is unfortunately not recorded by Prof. James F. Kemp, who very kindly sent it to me.

The two following species are also allied to the preceding in tarsal structure but belong more especially to the *agrestis* type:

Criocephalus lacustrinus n. sp.—Rather stout, dull, piceous-black, very finely and densely punctured throughout; head obtusely, strongly canaliculate but not at all behind the eyes, the occiput tumid dorsally; antennæ (♀) scarcely extending to basal fourth of the elytra, slender and filiform, black, nearly as in *agrestis*; prothorax scarcely more than two-fifths wider than long, slightly widest and laterally rounded subprominently a little behind the middle, the sides thence broadly rounded and moderately converging to the apex, more rapidly and sinuously converging to the base, which is but little narrower than the apex, the latter transverse; surface nearly as in *agrestis* but with the three pits much shallower and the lateral asperities less developed; elytra two and one-half times as long as wide, tapering feebly from base to the rather narrowly rounded apex and with very slightly arcuate sides, a fifth wider than the prothorax, the surface very minutely, evenly and densely punctate, without admixed larger punctures except basally and with the raised threads subobsolete, joining each other at apical third. Length (♀) 24.6 mm.; width 7.2 mm. Wisconsin (Bayfield),—Wickham.

Differs from *agrestis* in its finer, denser, more even elytral sculpture and very feeble threads, these being unusually strong in that species as in *asperatus*. It also differs markedly in its less transverse prothorax, with feebler impressions and less angulate sides.

Criocephalus cervinus n. sp.—Form more slender, less densely dull in lustre, of a pale red-brown throughout, the legs and antennæ concolorous; head nearly as in *lacustrinus*; antennæ (♂) slender, subfiliform, extending nearly to apical fourth of the elytra, in structure nearly as in *agrestis*; prothorax moderate in size, nearly one-half wider than long, the sides rounded and scarcely at all prominent well behind the middle, broadly rounded and subparallel for some distance thence anteriorly, rounded at apex, very rapidly and sinuously converging basally, the base distinctly narrower than the apex; surface very densely punctate, with pits as in

agrestis but very much shallower, the lateral asperities rather larger but less numerous; elytra nearly as in *agrestis* but more finely and uniformly, extremely densely punctate and with the raised threads much feebler though stronger than in the preceding. Length (σ^7) 19.5 mm.; width 5.4 mm. Indiana,—Levette.

This species differs from *agrestis* in its more slender outline, smaller, less deeply trifossate and laterally much less angulate prothorax, with the punctures less minute, more minute and uniform elytral sculpture, with the threads feebler and in the relatively shorter second antennal joint, this being only one-half as long as the third. *Agrestis* is notably more arctic in distribution, my series being from Lake Superior, Maine, Labrador and Ungava.

Tetropium Kirby.

This genus is well distinguished from any of those preceding by its divided eyes, the fine elevated isthmus connecting the upper and lower portions having no facets. The following has been recently received:

Tetropium columbianum n. sp.—Rather slender, dull in lustre, everywhere very densely punctate, the elytra extremely finely, the pronotum less so and the head rather strongly; color black, the elytra fulvous-brown, the entire under surface deep black; femora black, the tibiae piceous, the tarsi slightly paler; head small, the median line finely, deeply sulciform; eyes very widely separated, small and finely faceted; prothorax nearly as long as wide, parallel, the apex and base transversely truncate and equal; sides evenly and strongly rounded; surface very convex, extremely densely punctate throughout, not impressed, except a triangular subtransverse pit before the base; scutellum black, densely and minutely punctate, very obtuse; elytra more than a fourth wider than the prothorax, parallel, with straight sides, individually abruptly and very obtusely rounded at tip, opaque, the two discal raised lines barely traceable; under surface shining, finely, not densely punctate and with rather long coarse ashy hairs; hind tarsi very slender, three-fourths as long as the tibia, nearly as in *Criocephalus*, the third joint cleft almost to the base. Length (σ^7) 11.8 mm.; width 3.0 mm. British Columbia (Inverness),—communicated by Mr. J. H. Keen.

Differs from *parallellum*, to which alone it is allied, in its smaller head, broadly rounded and not angulate sides of the prothorax, more evenly punctate, less pubescent and medially unimpressed pronotum, much more broadly obtuse scutellum and other characters. The antennæ are missing in the type.

Smodicum Hald.

A remarkable genus, having male sexual characters affecting the prosternum in much the same way as in *Stenosphenus*. It is considered a distinct group of the Asemini by LeConte. The antennæ are nearly similar in length in the male and female, though stouter toward base in the former sex, in which also the thighs are noticeably thicker.

Smodicum convergens n. sp.—Elongate, parallel, depressed, shining, pale red-brown in color; head and eyes nearly as in *cucujiforme*, the antennæ much longer, the fifth joint very much longer than the third, the latter barely longer than the fourth; sides of the head behind the eyes virtually parallel; prothorax rather longer than wide, somewhat swollen behind the middle, the sides thence feebly converging and nearly straight to the very short apical arcuation, the apex and base equal in width; surface wholly unimpressed, rather strongly and loosely punctate, with a narrow impunctate median line; scutellum small, rounded; elytra parallel, with straight sides, nearly a third wider than the prothorax, almost as in *cucujiforme*, slightly dehiscent near the apex; legs much longer than in that species. Length (♀) 10.0 mm.; width 2.3 mm. Texas.

Larger than *cucujiforme* Say, deeper in coloration, with less parallel and unimpressed prothorax, longer antennæ and much longer legs. I think that the systematic position of *Smodicum* was correctly adjudged by LeConte and that the affinities with *Oeme*, suspected by Bates, do not evince themselves at all conclusively.

Tribe CALLIDIINI.

A group of Cerambycids separable from the Asemini, according to LeConte, by the membranous ligula. The eyes are always finely faceted, but in some genera such as *Physocnenum*, *Rhopalopus* and *Hylotrupes*, the second antennal joint has no such development as it has in the Asemini or even in *Callidium* and related genera.

Physocnenum Hald.

A number of distinct species of the *brevilineum* type exist in our collections, of which the two following seem to be hitherto undescribed:

Physocnenum compressipes n. sp.—Form as in *brevilineum* but darker and more obscure in coloration and without the more sparsely punctate sutural pale region before the middle of the elytra in that species, black, dull in lustre; head as in *brevilineum*, the antennæ (♂) nearly as long but stouter, the outer joints shorter, the last not longer than the preceding

and only about two-thirds as long as in that species; prothorax similar, except that the sides from behind the middle to near the apical margin are much more parallel, the punctureless sublateral spots near the base smaller and the smooth tumid median line toward base only partially evident; scutellum parallel, obtuse at apex, very densely punctate and pubescent; elytra distinctly wider than the prothorax, parallel, feebly narrowing near the obtuse apex, very flat, blackish, finely and very densely punctate almost throughout, the two median lateral pale lines distinct but the more basal line of *brevilineum* very faint; prosternum (♂) finely, transversely punctato-rugulose; thighs strongly dilated and much compressed. Length (♂) 10.5 mm.; width 3.0 mm. Wisconsin (Bayfield),—Wickham.

To be known at once from the same sex of *brevilineum* by the very much more compressed femoral enlargement, less slender antennæ, absence of sutural pale marking on the elytra, confused and not linear arrangement of the punctures just within the exterior pale marginal crest of the elytra and, finally and very obviously, by the sexual characters affecting the prosternum of the male, the portion before the coxæ in *brevilineum* being coarsely and sparsely punctate in that species and not finely, transversely punctate-rugose. In *brevilineum* the elytra have more or less of a violaceous reflection, especially toward tip, but this is wholly wanting in *compressipes*.

Physocnemum densum n. sp.—Larger than *brevilineum* and somewhat stouter, similar in coloration and ornamentation but differing in sculpture; head nearly similar, the antennæ (♀) a little longer, the tenth joint more than three times as long as wide; prothorax of like shape but somewhat larger, without velvety lustre, the sublateral smooth spaces near the base less linearly oblique and more diffused, the tubercles larger and less acute, the punctures small but deep, closely crowded, except in the smooth spaces, but distinct, each with a short coarse dark hair; elytra similar in general but with the punctures apically not becoming so sparse and each with a much shorter and less erect hair, the apices more broadly rounded; abdomen much less closely punctulate; last dorsal segment less punctate and subglabrous, the legs similar. Length (♀) 17.0 mm.; width 5.0 mm. Kansas.

The most important distinctive character, when comparison is made with the female of *brevilineum*, is the sculpture of the pronotum; in that species the punctures become exceedingly crowded and the deep black pubescence, especially medially and anteriorly, becomes so dense as to wholly conceal the sculpture and produce a homogeneous velvety-black surface. The examples of *brevilineum* in my collections agree completely with the descriptions of Say and LeConte and are from Dakota and Nebraska.

Hylotrupes Serv.

The species *bajulus* Linn., was probably introduced into the Atlantic States from Europe and has become abundant. The male sexual characters are very remarkable, reversing some of the ordinary tendencies in that sex observable elsewhere; for example, the prothorax is much more transverse and more swollen at the sides in the female than in the male and is very finely, closely sculptured, while in the male it is coarsely and sparsely punctate. It varies in size to an extraordinary degree and it is difficult to believe that some of the minute forms, such as that published by Bland (Proc. Ent. Soc. Phila., 1862, p. 8) under the name *Callidium? albofasciatum*, having a length of only 6 mm., and of notably slender outline, may not prove to be a distinct species; the described antennal structure shows that it can belong to no other genus than *Hylotrupes*. I have a European male of *bajulus* before me that measures only 8.2 mm.

Anocomis n. gen.

The unusual and very distinctive antennal structure of *Hylotrupes bajulus* Linn., shows that the *Callidium ligneum* of Fabricius, cannot be generically associated with it, especially as its entire habitus is different. *Ligneum* has always been a puzzle to taxonomists, not only as to its systematic position but in regard to the diversity of form and coloration that it exhibits. Haldeman listed it under *Callidium*, but LeConte in 1852 transferred it to *Physocnenum* Hald.; subsequently it was assigned to *Semanotus* and then to *Hylotrupes*, but, as a matter of fact, it should be considered a distinct generic type and the above name is here proposed.

The various forms, which have all been included under *ligneum*, have never been carefully studied in series and are generally misunderstood. The coloration appears to be not very variable, but on the contrary is often quasi-structural in nature. For example in all the normally colored examples before me, the punctures on the pale parts of the elytra are very coarse and sparse, but within the limits of the two rounded dark spots and on the posterior black portion of the elytra they become much less coarse and decidedly more close-set, thus indicating that the dark coloration does not

arbitrarily expand and contract in the way hitherto supposed. Moreover, in the black bifasciate species, it is difficult to see how the pattern of elytral coloration could have been derived from the normal type, and the discovery of a rather marked antennal structural peculiarity in one of these black forms would seem to indicate that it is not a color variation but a distinct species.* I would therefore separate the material before me into the six following species and subspecies:

Elytra pale, black in about apical third and each also with a rounded spot of the same tint at the centre of the pale area.....2

Elytra wholly black, crossed by two pale transverse fasciæ.....3

2—Form narrow, parallel, very obtusely rounded behind and but feebly convex; head rather small; eyes widely separated, small, almost divided; front convex, not canaliculate, rather coarsely, very densely punctured; antennæ about as long as the body (σ^7) or much shorter (φ), joints three to five increasing in length (σ^7) or with the fourth but little longer than the third and both much shorter than the fifth (φ), outer joints compressed, gradually more slender; prothorax small, wider than long, angularly prominent laterally at the middle, the sides thence feebly converging and evenly arcuate to the apex and similarly converging but broadly sinuate to the base, the surface very coarsely, densely punctate and with five moderately defined callous polished spots; scutellum dark, punctate, obtusely ogival; elytra more than twice as long as wide, coarsely, loosely punctate, more finely and closely in the dark areas; legs moderate. Length (φ) 10.0 mm.; width 3.2 mm. Pennsylvania. [*Callidium ligneum* Fabr.,—Mant. Ins., I, p. 153].....**lignea** Fabr.

A—Smaller than the preceding, the black apical area occupying nearly two-fifths of the elytra; head similar; antennæ (σ^7) distinctly incrassate basally, the second joint less than a third as long as the third, transverse, three to five increasing rather rapidly in length, sixth equal to the fifth, six to eight decreasing very slowly, the last slender, simple, only very slightly longer than the tenth; prothorax nearly as in *lignea* but with the central callous spot more prolonged anteriorly as a rule along the median line; scutellum much narrower; elytra shorter, twice as long as wide, similarly much wider than the prothorax and of nearly like sculpture, except that the punctures of the dark areas are still smaller and closer; legs rather short and slender, black. Length (σ^7) 7.7 mm.; width 2.5 mm. Colorado. . . . **parvicollis** n. subsp.

Form less parallel and more convex, much broader, black throughout, except the elytra, the femora black, tibiæ and tarsi dark brown; surface rather more shining than in the preceding; head larger than in the two preceding, not so narrowed behind the eyes and less confluent punctate, the punctures (σ^7) slightly separated; an-

* The eastern species live in the wood of cedars, according to Mr. Jülich, and the western in the wood of the Sequoia (Ent. Amer. I, p. 97).—Ricksecker.

tennæ not black but dark brown, of similar structure but rather longer, fully as long as the body (♂) and more even in thickness throughout, compressed, the last joint longer, much exceeding the tenth; prothorax larger and more transverse, similar though less strongly angulate at the sides, coarsely and densely but not so confluent punctate, the lateral callous spots broadly united longitudinally and also transversely at base with the median callus, which is prolonged anteriorly; scutellum much broader and very much more obtuse, wider than long; elytra very much wider than the prothorax, less than twice as long as wide (♂) or a little more than twice (♀), similar otherwise, though more narrowed at tip and with the central spot more elongate-oval, oblique and inconstant; legs (♂) rather long, with the thighs notably thicker than in the shorter legs of the female. Length (♂, ♀) 10.5-15.0 mm.; width 3.5-4.8 mm.; length of hind tibia (♂) 3.8 mm. California.

ampla n. sp.

A—Similar but very much narrower, with the legs (♂) shorter and pale throughout and with the femora less inflated; antennæ similar but more slender throughout, the second joint a little longer, as long as wide, almost half as long as the third and not a third as long as in the preceding, paler in color throughout. Length 9.3 mm.; width 2.6 mm.; length of hind tibia (♂) 3.0 mm. California..... **angusta** n. subsp.

3—Body rather broad in form, strongly shining, deep black, the testaceous fasciæ of the elytra near basal fourth and just behind the middle; head better developed than in *lignea*, nearly as in *ampla* but more densely and confluent punctate; antennæ (♂) fully as long as the body, notably and gradually stout basally, black, the second joint longer than wide, almost one-half as long as the third, fourth equal to the third and a little shorter than the fifth, five to eight decreasing almost imperceptibly in length but rather rapidly in thickness, the last very slender, longer than the tenth, or (♀) two-thirds as long as the body, more slender and equal throughout, the eighth joint fully three-fourths as long as the seventh; prothorax differing from the preceding forms in being more narrowed basally than apically, less prominent medially at the sides, otherwise nearly similar; scutellum obtuse, as wide as long; elytra narrowed from base to apex, barely so in the female, coarsely and loosely punctate throughout and more than twice as long as wide in both sexes, the fasciæ interrupted at the suture; legs black, the thighs not larger in the male than in the female. Length (♂, ♀) 9.0-12.0 mm.; width 2.8-4.0 mm. California. [*Hylotrupes litigiosus* Csy.,—Ann. N. Y. Acad., VI, p. 25]..... **litigiosa** Csy.

Body broad as in the preceding but parallel, the elytra not narrowed from base to apex, black, still more shining and with the bristling hairs longer and more conspicuous anteriorly and on the antennæ; pale fasciæ in nearly the same position but broader and not interrupted at the suture, the anterior not straight but crescentic, the attenuated ends flexed forward as far as the base in a fine line just

within the humeri; head nearly similar but gradually increasing in width to the base, where it is about as wide as across the eyes; antennæ (♀) notably more slender and very pale brown in color throughout, the last four joints abruptly much more distinctly shorter than the seventh and more abbreviated, the eighth only about twice as long as wide; prothorax shorter and more transverse, similarly more narrowed basally than apically but differing in being widest well before and not at the middle; surface nearly as in the preceding, the five callous spots isolated amid the dense coarse punctures; scutellum smaller, obtusely parabolic, as wide as long; elytra much wider than the prothorax, about twice as long as wide, very coarsely, loosely punctate throughout; legs pale brown, the femora blackish, the tarsi very slender. Length (♀) 10.0 mm.; width 3.1 mm. Maine.....*terminata* n. sp.

Although at first glance there seems to be but little diversity in the head and prothorax, closer observation shows not a little, especially in the shape of the latter and in the formation toward base in the former.

Dr. Horn states (Tr. Am. Ent. Soc., 1883, p. 289) that the *Callidium nicolas* of White, "is merely the dark form of *Hylotrupes ligneus* Fab." As there are several dark forms, I am unable to determine which, if either, of the above black species should be identified as *nicolas* White.*

Hemicallidium n. gen.

The type and only known species of this proposed new genus is the *Physocnemum amethystinum* of LeConte (Proc. Acad. Phila., VI, p. 234). It differs from *Hylotrupes*, where it is now listed, in its different antennal structure, conforming in this respect with *Anocomis* preceding, in its very much larger ocular emargination, which however does not come quite so near to completely dividing the eyes as it does in *Anocomis*, in the less widely separated coxæ, more slender femora and, as in *Anocomis*, much more securiform palpi; also in having no eroded spots on the elytra, the latter being in form and sculpture very nearly as in the restricted *Callidium*. It differs from *Anocomis* in the very rapidly and strongly, basally

* The description of *nicolas* given by White (Cat. Col. Br. Mus., VIII, p. 321) runs as follows: Of a blackish-brown; head punctured and with scattered grayish hairs. Thorax punctured irregularly, with five smooth spaces on the back, two in front, three behind, the central the largest; scutellum black. Elytra of a reddish-brown, with a transverse ochrey band a little behind the middle and a narrow ochre-colored margin from the shoulder to the band. Hab. —. Length 4 lines.

constricted prothorax, with the base briefly subtubulate as in *Merium* and *Hylotrupes*. The system of pronotal callosity resembles somewhat that of *Anocomis*, but differs radically from *Hylotrupes*. *Hemicallidium amethystinum* has the elytra deep and pure blue in color, with only the faintest violaceous lustre in certain lights, the remainder of the body deep polished black; it seems to be a rare insect, my single female example coming from North Fork, Madera Co., California.

Phymatodes Muls.

The eyes in this genus are always very deeply emarginate and sometimes divided, but there are so many intermediate stages that but little use can be made of this character in classification; a complete division is scarcely suggested in *variabilis* or in the *obscurus* group, but is nearly complete in *vulneratus* and *decussatus*, virtually complete in *varius* and entirely so in *amœnus* Say. The hind tarsi however have divergencies of form which are available as subgeneric criteria. There are scarcely any definite structural differences between *Callidium*, as restricted by LeConte, and *Phymatodes*, aside from general facies, where the distinction is very pronounced and except perhaps in the more widely separated middle coxæ of *Callidium*, but I find the deep transverse groove behind the frontal margin of *Callidium* is only feebly or not at all developed here. We might suggest the four following groups:

Hind tarsi long and slender, the first joint equal to the entire remainder.

Group I

Hind tarsi slender but with the first joint, though very elongate, much shorter than the remainder; elytra generally finely pubescent and punctulate. Group II

Hind tarsi very small, the first joint not or scarcely more than twice as long as wide. 2

2—Body narrower, more convex, the elytra bifasciate, very sparsely punctulate; eyes not divided; middle coxæ approximate, the mesosternal process narrow and very finely acuminate. Group III

Body less convex, generally broader, the elytra never fasciate nor finely, densely pubescent, strongly punctate; eyes completely divided in the typical species, undivided in others; middle coxæ well separated, the mesosternal process broadly triangular. . Group IV

Group II is rather heterogeneous but the others are fairly uniform within themselves in general habitus, though variable in the eyes as usual.

Group I.

Phymatodes in sp.

Our only species assignable to this group is the well known *variabilis* Linn., of rather large size and very elongate form, introduced into the Atlantic regions from Europe through commercial intercourse.

Group II.

Pœcilium Fairm.

This group may be subdivided into several sections as follows:

- Upper surface uniform in coloration.....2
 Upper surface uniform in color, except that the elytra became nubilously paler basally.....5
 Upper surface not or but seldom uniform in coloration and having a single pale transverse fascia at the middle of the elytra.....6
 Upper surface as in the preceding, except that the elytra have two transverse pale fasciæ.....7
 2—Prothorax rather loosely and irregularly punctate, generally with confused smooth callous areas.....3
 Prothorax densely punctate, without large callous spots.....4
 3—Color blackish-brown above, generally without very pronounced aneous tinge, paler and uniform beneath, the legs still paler and flavate-brown; punctures throughout strong though not very coarse, separated by about their own diameters anteriorly, not quite so strong and two or three times as sparse on the elytra; pubescence everywhere notably long, pallescent; prothorax slightly transverse, obtusely subangulate at the sides just before the middle, narrower at base than at apex; elytra nearly one-half wider than the prothorax, parallel, more than twice as long as wide, very obtuse at apex; legs well developed, the femora much dilated in the male. Length (♂) 9.4 mm.; width 2.9 mm. New York. [*Callidium æreum* Newm.,—Ent. Mag., V, 1838, p. 393; *C. pallipes* Hald.,—Tr. Am. Phil. Soc., X, 1847, p. 37].....**æreus** Newm.
 Color aneo-piceous, elongate, sparsely pubescent; prothorax shorter than wide, rounded at the sides, punctulate, margined at apex and base; elytra slightly wider than the prothorax, very shining, sparsely punctate; femora strongly clavate; antennæ rufescent at base. Length 7.5 mm. Near Fort Vancouver. [*P. æneus* Lec.,—Proc. Acad. Phila., 1854, p. 18].....**æneus** Lec.
 4—Form elongate, fusco-piceous in color, sparsely pubescent; head densely punctulate; prothorax slightly shorter than wide, rounded at the sides, densely punctate, with a smooth median line; elytra rather densely, less finely punctate; abdomen and legs testaceous. Length 10.7 mm. California (Punto de los Reyes). [*Callidium infuscatum* Lec.,—Proc. Acad. Phila., 1859, p. 285]..**infuscatum** Lec.
 Form nearly similar, larger in size, blackish-brown, not at all shining,

clothed with suberect fuscous hairs; head and prothorax extremely densely punctate, the latter sparsely pilose, nearly as long as wide, rounded at the sides, narrowed posteriorly, with an obsolete median line and a posterior sublateral callous spot smooth; elytra sparsely punctate, the punctures basally large, fine posteriorly; femora strongly incrassate, the tibiæ with long sparse hairs. Length 12.0–13.75 mm. California (Tejon). [*Callidium obscurum* Lec.,—Proc. Acad. Phila., 1859, p. 79].....**obscurus** Lec.

Form rather broader, much larger, piceous-black throughout, slightly shining; head very densely, granularly punctate, the eyes far from divided; antennæ (♂) four-fifths as long as the body, slender, the second joint nearly twice as long as wide and one-half as long as the third, last joint shorter than the tenth, simple, slender; prothorax fully as long as wide, parallel, with broadly and subevenly rounded sides, more converging very near the base, which is but little narrower than the apex; surface not coarsely, very densely and granularly punctate, becoming loosely and more coarsely so near the apex and very densely and granularly rugose on the flanks and beneath, the median line narrowly smooth and but feebly tumescent basally, the surface also broadly and very feebly tumescent near lateral fourth at or just in front of the middle, the summit subimpunctate and shining; basal smooth spots wanting; hairs erect, rather long but very sparse; scutellum extremely minutely and densely punctate and closely pubescent; elytra long, parallel, with straight sides, rapidly very obtusely and almost conjointly rounded at apex, two and one-half times as long as wide and one-half wider than the prothorax; surface subdepressed, very finely not densely punctate, scarcely less finely so basally, each puncture with a rather coarse but short suberect blackish hair; sutural angles narrowly rounded; legs long, the femora strongly clavate; abdomen smooth and polished, extremely minutely and remotely punctate, the fifth segment very short, broadly sinuato-truncate. Length (♂) 15.5 mm.; width 4.5 mm. California (San Diego).....**grandis** n. sp.

5—Parallel, notably depressed, dark smoky-brown, dull in lustre, minutely, extremely closely punctulate, more sparsely on the elytra, which are less dull, except in an opaque region behind a nubilously pallid area occupying not quite basal half of each and not involving the base or a gradually narrowing sutural region from the base, the said opaque area extending posteriorly to very near the apex; pronotum even, without callous spots but with a narrow smooth line broadening basally, the sides broadly and obtusely angulate at the middle; base much narrower than the apex; elytra much wider than the prothorax; pubescence throughout extremely short, close, not at all erect on the prothorax; thighs strongly clavate apically but scarcely more so in the male than in the female. Length (♂, ♀) 6.8–8.0 mm.; width 1.8–2.4 mm. Massachusetts and Colorado to southern Alaska. [*Callidium dimidiatum* Kirby,—Fn. Bor.-Am., IV, p. 173; *Clytus palliatus* Hald.,—Tr. Am. Phil. Soc., X, p. 41; *Callidium mannerheimi* Lec.,—Rept. Expl. and Surv., 1857, p. 60; (?) *kalmi* Schönh.,—Syn. Ins., I, 3, p. 442].....**dimidiatus** Kirby

6—Form suboblong, moderately convex, slightly shining, except in a rather large area just behind the elytral fascia, where the surface loses its punctures but becomes finely and very densely, granularly rugose and opaque; color black, the meso- and metasterna pale testaceous, the abdomen piceous, the legs pale red-brown; pubescence everywhere rather long, pale but not dense; head not coarsely but very deeply and closely punctate, the eyes not quite divided; antennæ (♂) three-fourths as long as the body, slender, pale, the second joint two-fifths as long as the third; prothorax slightly shorter than wide, obtusely angulate at the middle of the sides, scarcely more narrowed basally than apically, the base truncate; apex broadly arcuate, the surface convex, even, with rather small deep perforate and close-set punctures, the narrow smooth median line obliterated medially; scutellum extremely minutely and densely punctate and closely pubescent; elytra pale anteriorly, blackish behind the fascia, but little more than twice as long as wide, narrowing just visibly from the rather prominent humeri to the broadly and abruptly obtuse apex, the punctures small but strong, close in the testaceous and rather shining area between the white and arcuate, narrowly suturally interrupted fascia and the base, very fine and sparse at the polished apex; femora strongly clavate. Length (♂) 8.5 mm.; width 2.5 mm. California. [*P. vulneratus* Lec.,—Rept. Expl. and Surv., 1857, XII, p. 60].....**vulneratus** Lec.

Form narrower, the size much smaller, similar in coloration, except that the dark parts are piceous-black and the white elytral fascia narrower and more widely interrupted at the suture; lustre much more shining, the pubescence very much shorter and finer, sparse and inconspicuous; punctures of the head and prothorax smaller and much less close, separated by more than their diameters on the latter, becoming fine and sparse medially and apically, the smooth median line indistinct except basally; prothorax nearly as long as wide, the outline nearly as in the preceding but much more narrowed basally; scutellum with extremely minute dense punctulation and very minute close hairs, much smaller than in *vulneratus*; elytra perfectly parallel, only about a third wider than the prothorax, more than twice as long as wide, abruptly and very obtusely rounded at apex, the punctures coarse, impressed, separated by fully their own diameters and much larger than in *vulneratus* anteriorly, becoming small, feeble and closer, with the surface feebly subrugulose, behind the fascia, this area rather shining and not opaque as in *vulneratus*, excessively minute and remote at the polished apex; legs shorter than in the preceding, the apical femoral swelling less developed. Length (♂) 5.6 mm.; width 1.4 mm. California (Sta. Cruz Mts.).

concinnus n. sp.

7—Punctures of the upper surface small and close-set, generally sparser discally on the pronotum..... 8

Punctures of the upper surface notably coarse..... 10

8—Posterior fasciæ of the elytra very oblique; form narrow and notably elongate; color deep black throughout, with the part of the elytra before the anterior fascia faintly piceous, the legs black typically;

pubescence very short; antennæ (σ^7) long and slender, pale, fully as long as the body; prothorax slightly transverse, parallel, with very evenly rounded sides, the feebly granuliform punctures almost wanting broadly toward the middle of the evenly convex pronotum, the base but barely narrower than the apex; scutellum very densely punctulate and ashy-pubescent; elytra evidently more than twice as long as wide, a fifth wider than the prothorax, the sides very feebly converging from base to the very obtuse apex, the punctures minute and extremely dense, less so at apex and decidedly more distinct and sparser, with the hairs more erect and stiffer, between the anterior band and the base; femora strongly clavate, with the legs rapidly shorter postero-anteriorly. Length (σ^7) 7.6 mm.; width 2.2 mm. California (locality unrecorded). [*P. obliquus* Csy.,—Ann. N. Y. Acad. Sci., VI, p. 26].....**obliquus** Csy.

Posterior fasciæ similarly very oblique; body relatively shorter, broader and more depressed, black, the anterior parts and the elytra before the anterior fascia sometimes ferruginous; head finely, closely punctulate; antennæ (σ^7) slender and filiform, pale to blackish, not quite as long as the body, the joints very much shorter than in *obliquus*; prothorax shorter than in that species and more narrowed basally, more strongly rounded at the sides, the base much more considerably narrower than the apex, the sculpture nearly similar, rather closely and roughly punctured laterally, broadly subimpunctate medially; elytra but little more than twice as long as wide, subparallel and nearly straight at the sides, very obtuse at apex, relatively very much broader than in *obliquus*, being more than a fourth wider than the prothorax, almost similarly though somewhat more densely and less finely sculptured; legs differing but little sexually, the male femora less swollen than in *obliquus*; abdomen similarly polished and minutely, very sparsely punctulate and setulose. Length (σ^7 , ♀) 6.2–7.7 mm.; width 2.0–2.7 mm. California (Sta. Clara Co.),—Harford.....**harfordi** n. sp.

Posterior fasciæ transverse or nearly so.....9

9—Body slender, the elytra notably impressed suturally behind the scutellum, black or piceous-black, the pronotum more or less, anterior two-fifths of the elytra and the anterior part of the under surface—usually the pro- and mesosterna,—pale testaceous; pubescence very short, a little longer, more erect and bristling anteriorly as usual; antennæ (σ^7) pale, very slender, as long as the body, or (♀) three-fourths as long as the body, with the tenth joint two and one-half times as long as wide; prothorax evidently shorter than wide, rounded at the sides, more narrowed basally than apically, sparsely punctate medially, the smooth line broad and subconvex basally; elytra in general nearly as in the preceding but narrower; legs differing sexually much less than in the preceding, the femora moderately swollen, much shorter (σ^7) and less swollen than in *obliquus*. Length (σ^7 , ♀) 5.3–6.8 mm.; width 1.5–1.9 mm. California (Sta. Cruz Mts.). [*P. decussatus* Lec.,—Rept. Expl. and Surv., Ent., XII, 1857, p. 60].....**decussatus** Lec.

Body rather stout, the elytra not or scarcely at all impressed behind the

scutellum; color wholly black, perhaps sometimes paler anteriorly after the fashion of the preceding species, more closely punctate; antennæ (♀) very slender, blackish, three-fourths as long as the body, the tenth joint nearly three times as long as wide; prothorax notably larger than in the two preceding, wider than long, rounded at the sides, more narrowed at base, the punctures strongly granular and rather close-set throughout, not sparser along the middle but less dense in a small spot at each side and a little before the middle, also in a narrow impunctate line toward base; elytra scarcely a fifth wider than the prothorax, nearly as in the preceding in regard to form, sculpture and pubescence. Length (♀) 9.0 mm.; width 2.8 mm. Pennsylvania. [*Callidium varium* Fabr.,—Spec. Ins., I, p. 241; *versicolor* Gmel., ed. Linn., I, 4, p. 1852—Lake Superior].

varius Fabr.

A—Similar to the preceding in general structure, sculpture and in the short vestiture of this group, but rather narrower and less convex, pale rufo-ferruginous, the elytra black from a little before the anterior white band to the apex (♂), or pale only at base and thence more narrowly along the suture to the line of the anterior band (♀); abdomen and the greater part of the metasternum black; legs very pale; antennæ (♂) not quite as long as the body, or (♀) a little more than two-thirds as long as the body, with the tenth joint only a little more than twice as long as wide; prothorax and elytra nearly similar in form and sculpture; legs (♂) long, with strongly inflated femora, the posterior much larger than the two anterior, or (♀) more equal and smaller. Length (♂, ♀) 6.7–8.0 mm.; width 2.2–2.3 mm. Missouri. . . . **diffidens** n. subsp.

Body relatively broader, more depressed and with much smaller anterior parts than in *varius*, deep black and somewhat shining throughout, the bicolored elytra not evident in a large series; head densely sculptured; antennæ (♀) not more than two-thirds as long as the body, with shorter joints than in *varius*, the second relatively longer, being about half as long as the third, or (♂) nearly as long as the body, pallid with nubilously black distal parts of the joints, the second still almost half as long as the third; prothorax smaller than in *varius* and not so transverse or so strongly rounded at the sides, similarly closely, granularly punctate and with three longitudinal callous and smooth areas, the medial more basal; elytra barely more than twice as long as wide, parallel and straight at the sides, very obtuse at apex, fully a fourth (♂) to a third (♀) wider than the prothorax, the vestiture nearly as in *varius*, decumbent and close posteriorly, longer, coarser, sparser and less inclined basally. Length (♂, ♀) 5.7–8.0 mm.; width 1.8–2.7 mm. Massachusetts (Cohasset),—Frost. . . . **latipennis** n. sp.

10—"Dark brown; antennæ, under side and anterior portion of elytra lighter, the latter bearing two fasciæ, the anterior acutely angulate, the posterior broader, oblique and arcuate: the entire insect clothed with long fine hair, distantly placed, except on the elytral fasciæ. Head and thorax coarsely punctate, elytral punctures very strong. Thorax rounded and somewhat protuberant at the sides, moderately

convex on the disc; elytra parallel to one-third, thence slightly arcuately expanded to near the apex, which is broadly rounded, flattened on the disc. Antennæ ♂ about two-thirds as long, ♀ about half as long as the body. Length 4.5-6.5 mm. California (Los Angeles).” [*P. juglandis* Leng,—Ent. Amer., VI, p. 214].
juglandis Leng

The two following generically doubtful species are appended to this group; the descriptions are as originally published.

Blackish-piceous, finely, sparsely pubescent. Head and prothorax finely, not densely punctured, the latter a little wider than long, rounded at the sides, rufous, with a broad black dorsal stripe. Elytra not wider than the prothorax, densely punctured. Beneath sparsely punctulate, prothorax rufous, legs piceous, coxæ and thighs (except at base) blackish. Front coxæ contiguous; mesosternum triangular, middle coxæ slightly separated. Antennæ slender, filiform, a little more than half as long as the body, 4th joint equal to 5th. Length 6.3 mm. Lake Superior (Isle Royale). A single specimen. [*P. maculicollis* Lec.,—Proc. Am. Phil. Soc., XVII, p. 614].....**maculicollis** Lec.

Black, very sparsely and finely pubescent, head punctured; prothorax one-half wider than long, strongly punctured, much rounded at the sides; elytra strongly and equally punctured; antennæ and legs tinged with piceous, the former slender and about two-thirds as long as the body. Length 6.5 mm. New York (Buffalo). A single specimen. [*P. ater* Lec.,—Bull. Bk. Ent. Soc., VII, 1884, p. 100].....**ater** Lec.

Group III.

Subgenus **Phymatodina** nov.

Greatly resembles the *varius—decussatus* section of the preceding subgenus, but notably different in sculpture and in the very short hind tarsi; there are a number of species and subspecies as follows:

Elytra dark, but always pale between the anterior fascia and the base. . 2
 Elytra uniformly piceous-black throughout so far as known, excepting the white fasciæ..... 4

2—Legs not differing much in the two sexes. Rather narrow and feebly convex, strongly shining throughout, the punctures throughout bearing rather long fine erect hairs; head blackish; prothorax pale testaceous, infumate anteriorly; elytra pale testaceous, blackish behind the anterior fascia; under surface blackish, the abdomen still darker, the legs and antennæ pale; head small, sparsely punctate, the eyes far from divided; antennæ four-fifths as long as the body (♂) or less than three-fourths (♀), slender, evidently thicker in the male, bristling with long sparse hairs, the second joint nearly half as long as the third; prothorax as long as wide, distinctly narrower than the elytra, strongly and evenly rounded at the sides, convex, with mod-

erate though deep and well separated, unevenly distributed punctures, which are simple and impressed and not at all granose as in the preceding section; scutellum small, nude, shining; elytra but little more than twice as long as wide, very obtuse at apex, broadly and feebly swollen behind the middle, the punctures small but not minute, impressed, everywhere widely separated; anterior fascia subtransverse, widely interrupted at the suture, the posterior strongly bioblique and very narrowly interrupted, the fasciæ not flat as in the preceding section but convex, more sharply defined and narrower; prosternum coarsely, irregularly and closely punctured (σ^7), or very finely and sparsely (φ); legs rather short and with only moderately clavate thighs in either sex. Length (σ^7 , φ) 5.0–6.2 mm.; width 1.3–1.6 mm. California (Sta. Cruz Mts., and adjacent regions). [*P. nitidus* Lec.,—Trans. Am. Ent. Soc., V, p. 66,—Sacramento].

nitidus Lec.

- Legs much longer in the male, the femora more strongly inflated than in the male of *nitidus* and with the three pairs subequal, not rapidly diminishing postero-anteriorly as in the *varius* group.....3
- 3—Prothorax large, scarcely visibly narrower than the elytra; color, long bristling vestiture and sculpture as in *nitidus*; antennæ very pale, a little longer, with the second joint distinctly more than half as long as the third; prothorax not quite as long as wide, very strongly, evenly rounded at the sides, the smooth subconvex areas at the sides of the middle and on the median line basally nearly similar; scutellum very small, finely, loosely punctulate and with rather numerous small inclined hairs; elytra nearly similar though differing markedly in outline, scarcely swollen behind the middle and not at all wider there than at base, but differing especially in being arcuately narrowed in apical third to the much less obtuse apex; prosternum (σ^7) with the coarse punctures very much sparser than in *nitidus*. Length 6.6 mm.; width 1.8 mm. (σ^7). California (Sta. Cruz Mts.),—Harford.....**crucialis** n. sp.
- Prothorax much narrower than the elytra, fully as long as wide and of different form, being subparallel and nearly straight at the sides, strongly rounding anteriorly to the apex and gradually arcuate and converging in about posterior two-fifths to the base, which is narrower than the apex and not subequal as in the two preceding; sculpture, coloration and long sparse bristling pubescence as in the preceding, the form of body narrower and more elongate; elytra more elongate, much more than twice as long as wide, parallel and subsinuate at the sides in basal three-fifths, the sides then rather abruptly but feebly converging and straight to the obtusely rounded apex, the fasciæ similar but rather wider and of a purer white; legs well developed and nearly similar but paler ferruginous; punctures of the prosternum (σ^7) coarse and slightly separated, very irregular in form; antennæ very pale, distinctly more slender than in *crucialis*, nearly as in *nitidus*. Length (σ^7) 6.3 mm.; width 1.75 mm. California (locality unknown).....**elegans** n. sp.
- 4—Very slender, parallel, rather depressed, deep black, the elytra, prosternum and legs blackish-piceous; antennæ very slender as usual,

pale testaceous; punctures of the head and pronotum much finer and more remotely scattered than in any of the preceding, the prothorax a little longer than wide, parallel, evenly and rather strongly rounded at the sides, subconstricted at the base as usual, convex, distinctly narrower than the elytra; scutellum relatively not so small though nearly nude; elytra more than twice as long as wide, not parallel as in the preceding forms but gradually narrowed from base to the rather narrowly rounded apices, not at all swollen behind the middle, the punctures smaller, very minute and even more remotely scattered, the fasciæ nearly similar, the posterior shorter, being more widely interrupted at the suture; legs nearly as in *nitidus*, rather short and relatively small, though the femora are strongly clavate; punctures of the prosternum (♂) coarser and more conspicuous than in *nitidus*, close, almost crowded. Length (♂) 4.6 mm.; width 1.25 mm. California (locality unrecorded).

exilis n. sp.

Group IV.

Subgenus *Microcallidium* nov.

The typical forms are allied to the preceding in the very short tarsi, but differ conspicuously in general habitus, as well as in the completely divided eyes; the species more closely resemble minute members of the restricted genus *Callidium* than any usual form of *Phymatodes*. With the typical species, *amœnum* Say, are associated for the present two narrower and more convex species, which differ greatly in their undivided eyes. The species known to me may be easily known as follows:

- Elytra evenly and strongly, not densely punctate; form broader and more depressed. 2
- Elytra less coarsely and more closely punctate; form narrow and sub-cylindric, eyes not divided. 3
- 2—Oblong, feebly convex, strongly shining, pale testaceous throughout above and beneath, except the elytra, which are of a uniform dark steel-blue and the antennæ and tibiæ, which are black, the former picescent distally, the tarsi piceous; vestiture sparse, erect, rather short; head small, strongly and rather loosely punctate; antennæ very slender, as long as the body (♂) or shorter (♀), the second joint fully half as long as the third, slender; prothorax small, very much narrower than the elytra, subprominently swollen at the sides and widest well behind the middle, the punctures distinct, sparsely and irregularly scattered, the surface broadly impressed along each side of the median line basally and also very feebly, transversely impressed apically; base a little narrower than the apex; scutellum well developed, nude, pale in color; elytra barely twice as long as wide, parallel, rapidly and very obtusely rounded at tip, the punctures comparatively coarse, impressed; legs rather short, subsimilar

in the sexes, the femora only moderately swollen; prosternum transversely, rather finely, not densely and confluent punctate (♀), more closely rugose (♂). Length (♂, ♀) 4.8–6.3 mm.; width 1.6–2.0 mm. Missouri and Indiana to Pennsylvania. [*Callidium amœnum* Say,—Journ. Ac. Phila., III, 1823, p. 413; *Eriphus cocineicollis* Hald.—Tr. Am. Phil. Soc., X, 1847, p. 39] ... **amœnus** Say

A—Similar to the preceding in form, coloration and sculpture but very much larger, the antennæ with more elongate joints though similarly as long as the body (♂), and with a notably stouter basal joint; prothorax more broadly rounded at the sides and less prominent behind the middle, where however it is likewise widest; legs differing greatly, long, with large and very stout femora (♂), or notably small, with very moderate femora (♀); prosternum finely, closely rugose in the former, or finely, remotely punctate (♀). Length (♂, ♀) 7.0–7.8 mm.; width 2.4–2.6 mm. New York..... **hudsonicus** n. subsp.

3—Legs wholly testaceous. Form elongate, rufo-testaceous, with short sparse pallid pubescence; prothorax slightly shorter than wide, anteriorly somewhat, posteriorly distinctly, constricted, the sides rounded, sparsely punctate; elytra dark blue, densely punctate; abdomen nigrescent; antennæ obscure rufous at base. Length 6.3 mm. California (Tejon). [*Callidium blandum* Lec.,—Proc. Acad. Phila., 1859, p. 79]..... **blandus** Lec.

Legs deep black, the tibiæ and tarsi feebly picescent. Form narrow, convex, strongly shining, deep black throughout, the prothorax above and beneath alone paler and testaceous, the pronotum nubilously bordered with black at apex and base toward the middle; pubescence everywhere extremely short, inconspicuous; head finely but strongly, not densely punctate, the eyes very far from divided, the notch only penetrating two-thirds across; antennæ (♂) moderately slender, four-fifths as long as the body, blackish, the joints feebly pallescent toward their bases, the second a little more than half as long as the third; prothorax only very little narrower than the elytra, parallel, with very evenly and strongly arcuate sides, nearly as long as wide, the base and apex subequal, the former scarcely at all constricted; surface very convex, finely, not densely punctate, with an elongate and smooth, scarcely convex space at each side of the median line, which is narrowly impunctate basally but not tumid; scutellum small, nude, polished; elytra much more than twice as long as wide, parallel, rather obtusely rounded at apex, the punctures not very coarse, impressed, separated by about their own diameters; legs rather short, with moderately but very abruptly clavate femora, not differing much sexually; tarsi very short. Length (♂, ♀) 5.3–5.8 mm.; width 1.3–1.6 mm. New Mexico.... **densipennis** n. sp.

Æreus Newm., is now erroneously listed as a *Callidium* but was correctly assigned to *Phymatodes* by LeConte in his early studies; it does not seem to merit its name very obviously, as there is no distinct metallic lustre, at any rate in my single male example,

which was taken near Peekskill. *Obscurus* Lec., is represented in my collection by a single apparently authentic male, 10.0 by 3.0 mm. in size, taken at an unrecorded locality in California; it agrees well with the original description quoted above, except that the small basal smooth spots of the pronotum, though very evident, are not at all convex or callus-like, and that it is somewhat shining; *grandis* is probably sometimes confounded with *obscurus*, but is quite different in its more parallel elytra, less prominent humeri, uniform punctuation and absence of basal thoracic smooth spots, as well as in its materially larger size.

Variabilis is normally pale testaceous in color, with the entire elytra deep steel-blue; forms wholly pale occur however, as in *Hylotrupes bajulus* and *Gonocallus collaris*, but I have never noticed any definite inconstancy of that kind in the other species of *Phymatodes*, although the basal region of the elytra seems to vary from black to testaceous in a number of species; *diffidens*, of the above table, differs from the normally black *varius*, however, in some structural characters; for example, the isthmus connecting the upper and lower parts of the eyes in *varius* has the facets of its single line large, widely spaced and transversely oval, while in *diffidens* they become very close-set though still in single line.

Luridus Rossi,—in our lists under the name *thoracicus*—is an importation that seems to be still but rarely met with and may not be thoroughly established thus far; it is piceous in color, the prothorax rufous, with brownish spots laterally and the male antennæ are very slender and unusually long.

The remarks made under my original description of *obliquus* resulted from a confusion of specific forms. The male type of *obliquus* is labeled simply "Cal." From Sta. Clara Co., there are three examples, one a male with bicolored elytra, formerly placed with *decussatus* and two large females with entirely black elytra, previously regarded as females of the male *obliquus* type, but erroneously as is now evident; these three are the above described cotypes of *harfordi*.

It is almost a certainty that *semicircularis* Bland (Proc. Ent. Soc. Phila., 1862, p. 9), if not founded upon an extraordinary aberration or sport, which seems unlikely, is a species not only distinct but of a different genus. The type if still in existence should be studied more attentively.

Merium Kirby.

In addition to the type species of this genus there is at least one other, the differences which apparently are not due to sex being expressible as follows:

Elongate, black, the sterna of the hind body and the abdomen blackish-piceous; head black; elytra dark but suffusedly and irregularly pale before the middle internally and each with two acutely elevated pale vittæ, the fine marginal gutter also pale, the dark parts suffused with marked violaceous lustre; legs piceous-black, the femora testaceous, suffusedly dark basally and at apex, the vestiture consisting of very small sparse hairs; head strongly and confluent punctate; eyes finely faceted, two-thirds divided; antennæ (♀) scarcely two-thirds as long as the body, slender, the basal parts with a few long hairs and with the decumbent cinereous hairs rather dense, the second joint fully half as long as the third; prothorax one-half wider than long, the side parallel and broadly arcuate, becoming gradually strongly converging and arcuate to the basal constriction, the broadly and briefly tubulate base but little more than two-thirds as wide as the broadly arcuate and unreflexed apex; surface smooth, polished and unimpressed, with a few widely scattered coarse punctures, abruptly coarsely and very densely punctured laterally; elytra more than twice as long as wide, at base fully two-fifths wider than the prothorax, slightly narrowed from base to the rounded apices, the surface feebly rugose, coarsely, rather loosely punctured, the punctures becoming rather fine, asperulate and evidently separated apically over the rugulose surface, the vittæ becoming disintegrated posteriorly, disappearing at about apical fourth or fifth; legs rather long, the femora moderately swollen. Length (♀) 15.5 mm.; width 4.4 mm. British America and Lake Superior region; New York—LeConte. [*Callidium proteus* Kirby,—Fn. Bor.-Am., IV, 1837, p. 172].....**proteus** Kirby

Elongate but broader, black throughout, the abdomen picescent; legs nearly as in the preceding, the elytra wholly black, scarcely visibly picescent posteriorly, the dark parts wholly without violaceous lustre but with very faint greenish glint, the prothorax without trace of metallic reflection; head with strong but widely separated punctures, dense only laterally; antennæ (♀) nearly similar, except that the fine vestiture basally is sparser and less evident, the second joint being less than half as long as the third and that they are still shorter, only a little more than half as long as the body and gradually stouter toward base; prothorax differing notably, larger and more transverse, more than three-fourths wider than long, similar in general form but with the parallel sides anteriorly more arcuate, the still more briefly subtubulate base much wider, nearly four-fifths as wide as the apex, the latter broadly arcuate, acutely sub-reflexed medially; surface with median half smooth, polished and with a few very coarse punctures, which tend to define a broad smooth median line, the posterior part of the smooth surface with

two large subtransverse concavities, the dense lateral punctures coarser; elytra less evidently more than twice as long as wide, at base not over a third wider than the prothorax, with rather small and widely scattered punctures basally, becoming gradually very coarse, dense and rugulosely confluent apically, where they are not at all isolated or asperate, the pale lines very obtuse and represented only by some detached pallid spots ending slightly behind the middle. Length (♀) 16.0 mm.; width 5.0 mm. Wisconsin (Bayfield),—Wickham.....**bifossatum** n. sp.

The differences between these two species can be inferred very readily by a comparison of the descriptions, which are made unusually full for this purpose; the sculpture of the elytra toward tip is quite different in character in *bifossatum*.

Callidium Fabr.

As restricted by LeConte and apparently also by recent European authorities, this group of species is very homogeneous, having a rather broad, oblong and feebly convex body, with more transverse and laterally rounded prothorax than in any *Phymatodes*. It is probable that the genus originated on the North American continent and spread from the Atlantic regions to Europe; I infer this, at least, on discovering that our west coast form, hitherto mingled with the eastern representatives of *antennatum*, is subspecifically different. Our species excepting a few not at present before me, may be separated as follows:

- Antennæ very much longer in the male than in the female, somewhat incrassate basally and with the basal joint notably thick; prothorax with the lateral part very finely, densely and rugulosely punctate and opaque, especially in the male, the median part less opaque or alutaceous, feebly and loosely punctate and separated from the opaque area by a clear and abrupt line, which is sinuated just behind the middle.....2
- Antennæ apparently differing but little sexually; sculpture diversified...3
- 2—Oblong, very dull in lustre and deep obscure blue throughout above, parallel; antennæ (♂) fully as long as the body; prothorax in that sex fully as wide as the elytra to a little wider; elytra feebly and arcuately narrowed apically to the broadly rounded apices, very densely but shallowly punctate and each with two fine but very distinctly defined raised lines, the punctures apically becoming rather conflused and not well defined; prosternum (♂), opaque, very finely and densely, subconfluently punctate. Length 12.5–14.0 mm.; width 4.4–4.8 mm. Atlantic regions. [*C. antennatum* Newm.,—Ent. Mag., V, 1838, p. 393].....**antennatum** Newm.
- A—similar but not quite so broad, very similar in general size, form and facies, but with the antennæ (♂) not so long, being a little

shorter than the body, or (♀) but slightly more than half as long as the body; prothorax (♂) not quite so transverse and always somewhat narrower than the elytra, sculptured as in *antennatum* throughout, except that the densely punctured lateral areas are less opaque, the punctures being less minute; scutellum more shining and less obtuse; elytra differing radically in being more coarsely and deeply punctured, much more shining, with the punctures very distinctly defined and coarser apically, the fine raised lines obsolescent; prosternal sculpture (♂) similar but rather less minute, or (♀) smooth, shining and very finely, feebly and remotely sculptured. Length 12.0-14.0 mm.; width 4.0-4.8 mm. California, Nevada and Idaho. *hesperum* n. subs.

- 3—Size larger, oblong, somewhat shining, obscure deep blue, the elytra feebly violaceous, the antennæ slender; prothorax (♂) finely, very densely punctate and subopaque laterally and anteriorly, the median parts basally coarsely, deeply and closely so but shining, with a more shining and less closely sculptured spot at each side of the middle, or (♀) fully as large, similarly rounded at the sides but even more constricted and very broadly subtubulate at base, shining but with very coarse, dense and subconfluent punctures throughout, except a small smooth shining spot at the middle of the length near lateral fourth; elytra scarcely twice as long as wide, parallel, with perfectly straight sides to the very broadly rounded apices, much wider than the prothorax in both sexes, very coarsely, strongly and closely punctured throughout but shining, each puncture with a small hair growing from an acute granule at its anterior margin; prosternum (♂) finely, closely but deeply, rugulose punctate and dull, or (♀) strongly shining and coarsely, deeply, very confluent and transversely punctato-rugose. Length 9.0-13.3 mm.; width 3.2-5.0 mm. New York (Lake George). [*C. janthinum* Lec.,—Journ. Acad. Phila., ser. 2, II, p. 34]. *janthinum* Lec.

Size smaller, more convex, shining almost throughout. 4

- 4—Form elongate, very dark greenish-blue and strongly shining above, except at the sides of the prothorax, where the sculpture becomes abruptly very coarsely and opaquely punctato-rugose, the rugose area separated from the simply coarsely and deeply and rather closely punctate median part by a line that curves gently from the anterior margin near the sides to the sides before the base, without trace of sinus; under surface, legs and antennæ shining and deep black; pubescence erect, black and bristling from the head and prothorax laterally, almost wanting and extremely short on the elytra; head densely punctate, small, the antennæ (♂) about two-thirds as long as the body, rather thickened basally but with the basal joint not abnormally thickened; prothorax two-thirds wider than long, parallel, quite evenly and strongly rounded at the sides throughout, not at all constricted or subtubulate at base; scutellum small, nude, very obtusely and broadly ogival; elytra scarcely twice as long as wide, very feebly narrowed from base to the obtuse apices, at base distinctly wider than the prothorax, very coarsely, deeply and densely punctate throughout, the punctures irregularly and

polygonally crowded, a little smaller and separated toward base, the fine raised lines scarcely traceable; legs moderate, the femora strongly swollen; prosternum (♂) alutaceous, very coarsely and deeply, rather irregularly punctate and with a transversely and obtusely angulate smooth area before the coxæ, the punctures everywhere distinctly separated and well defined. Length (♂) 19.0 mm.; width 3.2 mm. California (locality unrecorded).

californicum n. sp.

Form nearly as elongate but less convex, shining, deep and obscure bluish-green throughout above, the legs, antennæ and under surface blackish-piceous and without metallic lustre, except a bluish reflection on the prosternum; vestiture nearly as in the preceding; head densely and strongly punctate; antennæ (♀) half as long as the body, the tenth joint less than one-half longer than wide, the last abruptly narrowed at apex; prothorax two-thirds wider than long, widest behind the middle, the sides strongly, evenly rounded, converging and feebly so thence to the apex, more rapidly converging and rounded to the very faintly subtubulate base, very coarsely, deeply, closely punctate, the punctures becoming much smaller, dense and rugulose but still shining at the sides; scutellum small, deeply grooved; elytra scarcely twice as long as wide, parallel, a third wider than the prothorax, very obtusely rounded at the apices, the punctures very coarse but shallow, densely crowded posteriorly, smaller and separated basally, the surface somewhat alutaceous, each puncture with a small polished green spot at its bottom; prosternum finely, sparsely punctulate and shining. Length (♀) 9.3 mm.; width 3.2 mm. Canada.....**frigidum** n. sp.

Form shorter, more oblong and still less convex, shining and metallic bluish anteriorly, obscure greenish on the elytra; antennæ blackish-piceous, the basal joint black, the legs piceous-black, the entire under surface pale piceo-testaceous, without metallic lustre at any part; head densely and strongly, rugosely punctate; antennæ (♀) rather more than half as long as the body, somewhat stout, the second joint more than half as long as the third, tenth nearly twice as long as wide, the last rapidly pointed but not constricted at apex; prothorax less transverse, barely one-half wider than long, widest at basal two-fifths, where the sides are subangularly prominent, thence rather feebly converging and feebly but evenly arcuate to the apex, very rapidly converging and nearly straight to the basal margin; punctures coarse, deep and close-set, becoming rather gradually less coarse, denser and more rugose though only a little less shining at the sides; scutellum small, concave apically; elytra evidently less than twice as long as wide, perfectly parallel throughout, rapidly and broadly rounded at apex, about a fourth wider than the prothorax, very coarsely, deeply and densely punctate, the punctures everywhere crowded and distorted, still coarse but only slightly separated though rounded basally; prosternum very finely, transversely rugulose, smooth at the middle. Length (♀) 9.0 mm.; width 3.3 mm. Wisconsin (Bayfield),—Wickham.

lacustre n. sp.

The locality of *janthinum* is erroneously given as "Texas" by Mr. Leng (Bull. Bk., VII, p. 113). It is northern, like all other species of the genus, and seems not to occur in the south; it is a very peculiar species, not only in sculpture but in sexual characters and is represented in my collections by two very dilapidated specimens kindly communicated by Prof. James F. Kemp;* it appears to be very rare; the elytra are singularly straight and parallel at the sides and the surface more flattened than in any other species. *Cicatricosum* Mann., is from Alaska and the Colorado examples so identified by Leng (l. c.) belong to a very different species. *Hirtellum* and *vile* of LeConte, are remarkable species either in coloration, size or sculpture, and may not be strictly congeneric. The greatest width given above for *antennatum* refers to the prothorax and, for *hesperum*, to the elytra. *Æreum* Newm., if I have correctly identified the species, is a true *Phymatodes* and not a *Callidium*.

Tribe CERAMBYCINI.

Some of the characters brought forward hitherto in an attempt to define genera among the allies of *Elaphidion*, in the LeContean group Cerambyci of this tribe, seem to be equivocal and of no real value. For example, the carination of the outer antennal joints, serving as the principal basis of the genus *Aneflus*, is quite as evident in *Hypermallus arizonensis* and is even very much more acute and distinct in *Elaphidion irroratum*; and the elongate patches of dense sensitive antennal pubescence advanced as one of the chief distinctive features of *Romaleum*, are quite as evident in *Aneflus*, *Hypermallus incertus* and some other species, not associable with *Romaleum* from any other viewpoint. Making use in some cases of rather more general characters, involving the habitus of the various species, and of some well defined structural modifications of the antennal spines and elytral apex, I would suggest the following scheme for the separation of the rather numerous genera:

- Spine of the third antennal joint very long and conspicuous. 2
 Spine of the third joint short, sometimes becoming obsolete though then represented by a sharply defined angle. 3

*Very recently Mr. Frost has generously sent me three very good specimens of this species taken at Monmouth, Me. In one of these examples, a large female, the color is pure blue with scarcely any violaceous reflection; in some other specimens the elytra are strongly violaceous.

2—Prothorax shorter than wide, rounded at the sides and with large callous spaces; upper surface irregularly pubescent; prosternum vertical behind; femora bispinose at apex; elytra strongly bispinose at tip. [Type *Cerambyx irroratus* Linn.]..... **Elaphidion**

Prothorax elongate and cylindrical; upper surface subglabrous but having long erect flying hairs; prosternum not vertical, sloping gradually upward behind; body very slender, linear and moderately shining, punctate; elytra sinuato-truncate but not spinose at apex; antennæ somewhat flattened distally. [Type *Elaphidion tenue* Lec.]

Anepsyra

3—Prothorax elongate, nearly or quite cylindrical; vestiture as a rule uniform, subdecumbent and more or less scanty; body more or less slender, the elytra very elongate, parallel or very nearly and rectilinear at the sides, very moderately spinulose at tip as a rule.....4

Prothorax never elongate, generally distinctly wider than long, with rounded or subangular sides; body frequently very stout, though sometimes notably slender, the elytra less parallel and with less rectilinear sides, the decumbent vestiture generally variegated with more condensed irregular patches.....6

4—Prothorax feebly biconstricted and very feebly and remotely punctate, shining as in many *Ibidiones*; body extremely slender, notably shining, the met-episterna very narrow and parallel; antennæ very slender and filiform, not carinate at any part, the outer joints not at all flattened, the spines very small, not visible beyond the fourth joint; elytra deeply sinuate and moderately bispinose at apex; legs and tarsi very slender, the femora not spinose. [Type *Stenocorus unicolor* Rand.]..... **Pseudibidion**

Prothorax not biconstricted, always strongly and closely sculptured; femora not or very feebly bispinose at tip.....5

5—Body moderate in size, slightly less slender than in *Pseudibidion*; antennæ slender, with joints three to five or six carinate, sometimes strongly but generally rather obsoletely, the outer joints but very slightly flattened, not or but slightly carinate; pubescence uniform and rather sparse as a rule; elytra narrowly sinuate and feebly bidentate at apex in typical forms. [Type *Elaphidion subpubescens* Lec.]..... **Aneflomorpha**

Body much larger, the antennæ long and broader, strongly flattened, the outer joints distinctly carinate, the subbasal without trace of the *Ibidion*-like carina; sculpture of the upper surface coarser and more conspicuous in the typical forms, the elytral tips emarginate and moderately bispinose. [Type *Elaphidion protensum* Lec.]... **Aneflus**

6—Body large and notably stout, with great sexual differences in the form and sculpture of the prothorax; antennæ more or less flattened apically, with notably developed dense sensitive punctulation along the concave lower part of the joints; spines moderate; met-episterna broad, distinctly narrowed antero-posteriorly. [Type *Cerambyx atomarius* Drury]..... **Romaleum**

Body smaller, moderate to small in size and always much less stout in form, sometimes very slender; sexual differences in the prothorax frequently distinct in sculpture but less marked than in *Romaleum*;

met-episterna narrower and parallel or very nearly; antennæ more or less flattened distally and often prominently convex along the inner face of the joints.....7
 7—Elytra spinose at tip. [Type *Cerambyx villosus* Fabr.]... **Hypermallus**
 Elytra narrowly truncate at tip, the sutural angle distinct and sometimes very minutely dentiform; hind body shorter and relatively broader in form. [Type *Elaphidion cinerascens* Lec.]..... **Anoplium**

As may be inferred, the genus *Aneflus*, as formerly organized by LeConte, was complex and included the above defined genera *Anepsyra* and *Aneflomorpha* as well as *Aneflus* proper. The arrangement here proposed makes the transition from such forms as *Anoplium mæstum* Lec., to the genus *Tylonotus* very easy and natural but widely separates *Elaphidion* from *Hypermallus*; this however I believe to be correct as the remarkable prosternal characters and very long spine of the antennæ show that it is not closely related to *Hypermallus*, in spite of a certain general facies in common. It seems evident that nearly all the described species can be distributed among the above defined genera, though a few may demand still other generic or subgeneric assignment, such for example as *Elaphidion levettei* Csy., which is not a typical *Aneflus*, where it is placed by Schaeffer, and *E. lanatum* Chev., as identified by Horn (Ent. Amer., VI, p. 214) from Florida, the latter being only 4-5.5 mm. in length, which alone casts suspicion upon it as a member of this group. The true Cuban *lanatum* is a very different thing, if the above published measurements are correct, it being 15½ by 3½ mm. in dimensions.

The genus *Eustroma* Lec., probably belongs with the others included above in the *Elaphidion* section of the Cerambyci, but is here omitted for various reasons.

Elaphidion Serv.

The type of this genus, *irroratum* Linn., has the posterior limit of the prosternum transversely acute, the posterior wall vertical or even concave, but in *mucronatum* the posterior limit is not acute and the wall is barely vertical; these two species also differ very much in general elytral sculpture and vestiture but appear otherwise to be congeneric. *Mimeticum* Schf., and *mutatum* Gahan, may also be placed here, as well as *tectum* Lec., though in *tectum* there seems to be a notable diminution of the antennal spines when com-

pared with *mucronatum*, and I have seen no reference to its prosternal structure.

Anepsyra n. gen.

A distinct genus seems to be necessary for *Elaphidion tenue* and *Aneflus volitans* of LeConte, for which the above name is suggested. The very conspicuous spine of the third antennal joint, which is two-thirds as long as the fourth joint in both species, together with the elongate prothorax and the vestiture of erect flying hairs, indicates that the genus may be suggestive in some measure of the tropical *Psyrrassa*. Both species seem to be rare, inhabiting respectively southern Texas and Lower California.

Pseudibidion n. gen.

This name is suggested for a genus to receive the species described by Randall under the name *Stenocorus unicolor* and subsequently having several other resting places in the taxonomic scheme, until finally included as an aberrant *Elaphidion* in our recent lists. It is of an isolated facies among our species, and the characters given in the table set forth its more salient peculiarities.

Aneflomorpha n. gen.

This genus is a moderately large one. Besides *subpubescens* Lec., it will comprise, among the described species, *lengi* Schf., which has the peculiar Ibidion-like carina of antennal joints 3-6 well developed as in *unispinosa*, described below, *Elaphidion lineare* of LeConte, from California, the Mexican *Aneflus cylindricollis* of Bates and possibly *Aneflus calvatus* Horn. *Elaphidion aculeatum* also seems to be best assigned to *Aneflomorpha*, although the antennal and elytral spines appear to be more developed than is the rule in this genus, and there would seem to be a greater development of the so-called flying hairs on the upper surface, these being absent or scarcely visible in the normal species, such as *subpubescens* and those described below. *Levettei* Csy., can likewise be appended to this genus as a very aberrant member, having the same outline and general structure but differing very strikingly from normal forms in sculpture and vestiture, the small decumbent cinereous hairs of the elytra being aggregated into about four dense vittæ on each

elytron; there are also a few moderately long erect stiff tactile hairs arising from coarser punctures, arranged linearly among the smaller and closer punctures, a series along the sutural margin being especially conspicuous; according, however, to Mr. Schaeffer, the antennæ would seem to be much more flattened and distally carinate than in any other, making a closer approach to *Aneflus* in this respect. The two species first described below are consistent allies of *subpubescens* and the third is also very similar in every way, except in the structure of the elytral apices and in the stronger subbasal antennal carina.

Aneflomorpha seminuda n. sp.—Form as in *subpubescens* but smaller and relatively still narrower, pale brownish-testaceous throughout; head and prothorax very densely, subrugosely punctate and with moderate even subdecumbent hairs, the latter cylindrical, about a sixth longer than wide, the sides very feebly prominent at the middle and slightly rounding at apex, the surface very evenly, coarsely and confluent punctate throughout, the walls of the punctures entire at their posterior but generally open at their anterior margins; antennæ (♂) about as long as the body, slender, the spines very small, wanting after the fifth joint, the third two-fifths longer than the fourth; scutellum rounded, very densely and pallidly pubescent; elytra perfectly parallel, with straight sides, more than three times as long as the prothorax and not quite two-fifths wider, the punctures rather coarse, deep, separated by scarcely more than their diameters basally, becoming gradually very fine and relatively less close at the apices, the latter narrowly and rather deeply sinuate, the sinuses limited at each side by equal and acutely dentiform angles, which are not at all spiniform; femora slender, scarcely at all spinose at apex; fifth ventral (♂) with the rectilinearly truncate apex only half as wide as the base. Length (♂) 13.8 mm.; width 2.6 mm. Texas.

To be known easily by the slender parallel form and short, decumbent, well separated hairs and virtual absence of erect hairs; the antennal spines are smaller, the pronotal punctures coarser and more confluent and the abdomen laterally much less densely punctulate and pubescent than in *subpubescens*, the abdomen being very uniformly, finely, sparsely punctate and pubescent throughout.

Aneflomorpha longipennis n. sp.—Form and coloration nearly as in the preceding but with relatively longer elytra and shorter anterior parts, also slightly greater convexity; head and prothorax very densely, confluent punctate throughout, the latter only very slightly longer than wide, parallel, the sides becoming feebly arcuate medially, the pallid hairs rather coarse, subdecumbent and well separated, very even throughout; antennæ (♂) not quite as long as the body, very slender, the outer joints filiform, not compressed and unmodified, the spines of joints

three to five better developed, rapidly diminishing, that of the third joint nearly two-fifths as long as the fourth joint, third joint nearly one-half longer than the fourth; scutellum rounded behind, moderately densely clothed with very short pallid hairs; elytra rather more than four times as long as the prothorax and more than one-half wider, perfectly parallel, the punctures rather small and well separated even basally, the apices as in the preceding, the fifth ventral more broadly and arcuately truncate; legs very slender, the femora not spinose; abdomen uniformly and somewhat strongly punctate and feebly pubescent throughout. Length (σ^7) 14.0 mm.; width 2.9 mm. California (Siskiyou Co.),—Kœbele.

The elytral pubescence is decumbent, sparse, even and unmixed with erect hairs of any kind. It is much larger than *linearis* Lec., to which it may be allied, differing besides in the almost complete extinction of anything that could be called a posterior thoracic callus, there being simply the remains of a very narrow impunctate median line just behind the centre; the elytral punctures also seem to be smaller; *linearis* is from the southern part of the state.

**Aneflomorpha unispinosa* n. sp.—Similar in its very elongate and narrow, parallel form but less testaceous and more piceous in color throughout, the vestiture of whitish hairs decumbent, scanty and unmingled with erect hairs; head wider than the apex of the prothorax, very densely punctate, the eyes separated by only three-fifths their width; antennæ (σ^7) very slender and filiform, evidently longer than the body, the spines small, the dorsal carina very strong and clearly defined on the subbasal joints, the fourth joint much longer than the first; prothorax elongate, fully a fourth longer than wide, cylindric, very feebly and obtusely subprominent at the sides well behind the middle, the punctures very coarse, densely confluent throughout, with a very small elongate impunctate median line behind the centre; scutellum rounded, densely and pallidly pubescent; elytra about four times as long as the prothorax and two-thirds wider, rectilinear, the apices each with a very small feeble sinus, which is limited by a long spiniform sutural projection and a very broadly obtuse lateral angle; punctures basally very moderate but deep, separated by two to nearly three times their diameters and with not more than half the diameter of the thoracic punctures, becoming fine and rather sparser apically nearly as in *longipennis* but not so noticeably so as in *subpubescens* and especially in *seminuda*; legs slender, the femora mutic, the fifth ventral (σ^7) sinuato-truncate. Length (σ^7) 16.5 mm.; width 3.2 mm. Mexico (Colonia Garcia, Chihuahua),—Townsend.

Differs from the two preceding and *subpubescens* in its rufo-piceous color, more slender and relatively even more coarsely punctured prothorax, longer antennæ, in the elytral apices and the fine strong dorsal carina of the antennal joints almost throughout but becoming much stronger on the subbasal joints.

Aneflus Lec.

The antennæ in this genus become much more flattened distally than in the preceding three genera, with a convex ridge along the median line of the outer joints, but without trace of the dorsal carina of the subbasal joints observable in *Aneflomorpha*. The size of the body is also very much greater. Besides the type described as *Elaphidion protensum* by LeConte, the genus will probably include *Elaphidion fuchsi* Wick. (Can. Ent., 1905, p. 170), as well as *Aneflus prolixus* Lec. (Sm. Misc. Coll., 264, 1873, p. 203). The following species seems to be allied to *prolixus*:

Aneflus cochisensis n. sp.—Very elongate, moderately slender, very dark piceous-brown throughout, covered uniformly with rather coarse and decumbent, close-set whitish hairs, without erect hairs, except toward the sides, more notably of the head and prothorax; head densely rugose, with a fine abrupt striiform canaliculation; antennæ (♂) extending to apical fourth or fifth of the elytra, rather stout, compressed, densely, finely pubescent, with short decumbent pale hairs, the second joint anchylosed with the third, as long as wide, third much longer than the fourth but only just visibly longer than the fifth, swollen at tip and with a short and very stiff diverging spine, the carina of the distal joints very obtuse, convex, the apical process of the last joint abruptly narrowed, parallel; prothorax cylindrical, very slightly elongate, parallel and but slightly uneven at the sides, very coarsely, densely and confluent punctate, with a small irregular callus on the middle line at outer fifth, a small and more anterior, less lateral tubercle and a minute callus in the same line near the base, also with a narrow, very irregular callous median line for a short distance behind the centre; scutellum finely, closely pubescent, with a polished nude median line; elytra not quite four times as long as the prothorax and almost one-half wider, three times as long as wide, parallel and very straight at the sides to the conjointly semicircular apex, each with a small shallow apical sinus, the sutural spine short but slender, the outer obtusely dentiform; surface irregularly but rather loosely punctured, very coarsely so basally, finely and obscurely distally, each having two broad feeble raised discal lines; legs moderate; femora not spinose; fifth ventral (♂) much shorter than the fourth, broadly sinuate at tip, the lateral angles well defined; palpi stout, the last joint of the maxillary nearly as long as the two preceding, twice as long as wide, obliquely arcuate at tip. Length (♂) 26.0 mm.; width 5.8 mm. Arizona (Douglas, Cochise Co.).—F. H. Snow.

A single male sent to me under the name *Aneflus protensus* Lec. It differs from *protensus*, which is a native of Sonora, Mexico, in its cylindrical, parallel and not anteriorly and posteriorly narrowed prothorax, which is said to be subangularly rounded at the sides in that species, in the absence of transverse pronotal plications, in the

short and inconspicuous apical spines of the elytra, the scarcely at all spinose femora and apparently rather more plentiful or coarser pubescence.

Romaleum White.

The moderately numerous species of *Romaleum* are well distinguished from any other of the *Elaphidion* section of the Cerambyci, by their large size, very stout and more or less convex form, great sexual differences in the prothorax and broader and more posteriorly narrowed met-episterna. The genus is a distinctly valid one. Besides *simplicicolle* Hald., and *procerum* Lec., the latter being plainly distinct from the former and not a variety,—much less a synonym as pronounced by Dr. Horn—the genus will include *atomarium* Drury, *rufulum* Hald., *seminitidum* Horn and *tenuatum* Lec.; the species *niveitectum*, of Schaeffer, may also be included for the present, although it differs considerably in thoracic characters. The three following species are allied to *atomarium* and *rufulum*:

Romaleum thoracicum n. sp.—Stout, convex, very dark brown to blackish throughout. Female with the antennæ slender, flattened beyond the fourth joint, extending to about apical fourth of the elytra, strongly punctured and coarsely, pallidly pubescent basally, becoming more finely so on the sixth and thence very finely and densely to the tip, with the more densely pubescent areas conspicuous, the spines small, gradually decreasing, the joints beyond the fourth bispinose at apex, fourth two-thirds as long as the third and less than four-fifths as long as the fifth; prothorax subglobular, about a fourth wider than long, evenly and strongly rounded on the sides throughout, the apex distinctly narrower than the base; surface coarsely, not very deeply, confluent and confusedly punctured, having only moderately close, even, short decumbent hairs and very numerous longer erect hairs, having also a tumid callus two-fifths from the apex at outer fourth and an elongate-oval, smooth and feebly convex area on the median line behind the centre; elytra two and a third times longer than wide, a fourth wider than the prothorax, tapering rather strongly from base to apex, the apices broadly sinuate between the rather long and slender, equal spines; surface even, the short yellowish vestiture closely decumbent and aggregated into irregularly condensed areas, also with numerous short stiff suberect hairs throughout, not so long as those of the prothorax, the punctures strong, only moderately large, deep, perforate, separated by two to four times their diameters basally, sensibly smaller but distinct distally; femora wholly unarmed. Male similar but larger, the antennæ two-thirds longer than the body, gradually notably stout basally, densely sculptured, the fourth and fifth joints equal; prothorax narrower and less transverse than in *atomarium*, distinctly narrower than the base of the elytra, with nearly similar fine dense sculpture and callous spots, but less densely, more finely and more

evenly pubescent; elytra nearly as in the female. Length ($\sigma^7, \text{♀}$) 23.0–26.5 mm.; width 6.7–7.8 mm. Texas.

In the female of *atomarium* the prothorax is more transverse, with apex and base equal and the parallel sides broadly angulate medially, thence straight and converging to base and apex, the coarse punctures deeper and less confluent, the pubescence more irregularly condensed and the bristling erect hairs less numerous; the antennæ are longer, rather stouter and with the fourth and fifth joints equal and, finally, the elytra are more elongate and more coarsely punctate, the elongation much more evident in the male than in the female. My examples of *atomarium* come from Missouri, but seem to be similar in every way to those from the type locality in New York.

Romaleum mancum n. sp.—Male similar to the male of *rufulum* in general form, pallid coloration and sculpture but a little narrower and distinctly more parallel, the antennæ notably stouter very gradually toward base than in that species, similar in length and vestiture; prothorax smaller and much less transverse, much narrower than the base of the elytra, about a fourth wider than long, similar otherwise; elytra similar but less narrowed from base to apex, the small decumbent dense hairs finer, shorter and still more uniform, the apices wholly different, not having the two long spines of *rufulum* but more narrowly and feebly sinuato-truncate, the sutural spine long and slender as in that species, the outer limit of the sinus indicated only by a very broad obtuse angle. Length (σ^7) 25.0 mm.; width 6.8 mm. Rhode Island.

Differs from *rufulum* principally in the characters above described; the difference in form of the elytral apices is very remarkable and there is no evidence of mutilation of any kind, even under moderate powers of the microscope, the very obtuse outer angle being identical on both elytra and very clearly outlined; this, together with the stouter antennæ, smaller and less transverse prothorax and finer vestiture, apparently indicates specific difference.

Romaleum crinicorne n. sp.—Female a little larger, stouter and more convex than the female of *rufulum*, similar in coloration, sculpture and in the antennæ; prothorax differing greatly, nearly one-half wider than long, widest at about the middle, the sides broadly and subevenly rounded throughout, except rapidly a little more so at apex and subsinuate before the base, which is broadly subtubulate, evidently wider than the apex; surface coarsely, deeply and densely punctate, the callous areas nearly as in *rufulum*; scutellum larger and more transverse; elytra similar in general form and not quite a fourth wider than the prothorax, the dense decumbent hairs smaller and broadly, feebly mottled in density, the erect hairs short and sparse but more distinctly visible than in *rufulum*, the

apices somewhat different, similarly sinuate and with similar sutural spine, the outer limit however not spiniform but rather prominently and acutely dentate, the tooth broad basally and not quite as long as the sutural spine; under surface much less densely pubescent, the fifth ventral narrower and longer. Length (♀) 26.5 mm.; width 7.8 mm. Texas.

The form of the prothorax in the female of *rufulum* is rather obtrapezoidal, with broadly and feebly arcuate sides, the greatest width being anteriorly and the apex much wider than the base; the surface also is less convex than in *crinicornis* and the vestiture, as well as that of the remainder of the body and especially of the under surface, less dense; these divergencies, together with the larger and stouter body and form of the elytral apices, will readily serve to distinguish the two species. The antennæ are similarly pubescent, the fringe along the under side of the joints conspicuous.

Hypermallus Lac.

The rather numerous species of this genus have never been adequately studied; they have a rather monotonous appearance, which may be the source of much of this neglect. I would propose the following arrangement of the material now in my collection:

- Form stouter, sometimes of rather large size, the pronotum with large callous spaces.....2
- Form narrower, sometimes linear, the pronotum not having smooth areas except on the median line behind the centre.....4
- 2—Body large; callous areas of the pronotum three in number, the usual two anterior obsolete, the sculpture rather strong and irregularly confluent; sublateral smooth areas elongate, linear and irregular from before the middle to the base, the median spot behind the centre elongate-fusiform, flat; surface with a few small scattered condensed yellowish spots; elytra two-fifths wider than the prothorax and not quite four times as long, feebly tapering throughout, the apices truncate, with a small but distinct sutural spine and broad and rather acutely prominent lateral tooth; punctures very coarse toward base; pubescence sparsely variegated. Length 20.5–23.5 mm.; width 5.6–5.9 mm. Arizona..... **arizonensis** Csy.
- Body moderate to small in size, the polished callous areas of the pronotum five in number.....3
- 3—Moderately large, rather stout, dark red-brown, with sparse and rather fine condensed spots on the elytra; prothorax about a third wider than long, the entire median line broadly smooth and feebly swollen, narrow anteriorly, the basal of the sublateral smooth tumidities elongate, the anterior and less lateral smaller and rounded; punctures (♀) coarse and close but not confluent, notably varying in size, the hairs coarse, sparse and subuniform; elytra subparallel,

narrowing only apically, the apices rather broadly truncate and acutely bidentate, the sutural tooth small, the outer moderately long but not acicular, less than three times as long as wide and two-fifths wider than the prothorax, the punctures coarse but widely separated basally, denser toward the sides, very fine apically. Length 17.5 mm.; width 5.0 mm. Missouri **flumineus** n. sp.

Moderately large, though smaller than the preceding and rather narrower in form, blackish-piceous, slightly shining, the short stout decumbent hairs aggregated into dense irregular clusters, the erect hairs of the elytra numerous, rather long but not conspicuous; head not densely puncto-rugose, the antennæ (♂) very nearly as long as the body, rather stout, the third joint a little less than one-half longer than the fourth, or (♀) four-fifths as long as the body but otherwise nearly similar; prothorax subsimilar in the sexes, about a third wider than long, with parallel, unevenly rounded sides, the fine constriction behind the apical margin deep and acute, the punctures between the callous areas very coarse, deep and rather uneven; elytra nearly as in the preceding, except that the feebly sinuate apical truncatures are bounded externally by a long slender spine, the sutural spine small but aciculate; fifth ventral (♂) slightly longer than the fourth and evenly, rather broadly rounded, or (♀) nearly one-half longer than the fourth and more narrowly rounded, not barely at all longer than the fourth and more broadly rounded as in *flumineus*. Length (♂, ♀) 11.8-15.8 mm.; width 3.0-4.4 mm. Pennsylvania **incertus** Newm.

A—Similar to the preceding in every way but smaller and less stout, with the antennæ much more slender and with the very moderate spines not thick and directed strongly outward as in *incertus*, but thin and much more axial in direction; pronotal punctures (♀) still coarser and more uniform in size, the callous spots nearly similar, except that on the outer slope of the antero-sublateral spots there is a large shallow rounded pit; elytra similar but about three times as long as wide, the sinuato-truncate apices similar and with the sutural projection very small, the lateral being relatively much longer, very slender and spiculiform; erect hairs not more numerous but paler and more conspicuous. Length (♀) 13.0 mm.; width 3.4 mm. Wisconsin **externus** n. subsp.

Very small in size, more cylindrical, pale red-brown, feebly shining; head not densely but irregularly sculptured; antennæ (♂) shorter than the body and unusually stout, very pale, pubescent, the spines small, not very divergent, the fourth joint scarcely more than twice as long as wide; prothorax nearly as in *incertus* but with the coarse yellowish decumbent hairs much closer, almost concealing the sculpture, which is nearly similar, the sides less rapidly rounding to the feebly constricted apical margin; elytra nearly similar in general form but only a little more than twice as long as wide and but about a fifth wider than the prothorax, differing from either of the two preceding forms in having the coarse decumbent yellowish hairs uniformly denser and less aggregated into dense clusters and in having the deep and relatively still coarser punctures closer; more impressed

and less diminishing posteriorly, being still rather large apically; apices nearly as in *incertus*; fifth ventral broadly truncate, rather shorter than the fourth. Length (σ^7) 8.5 mm.; width 2.4 mm. Indiana,—Levette..... **brevicornis** n. sp.

4—Form moderately slender, the third antennal joint always very much longer than the fourth.....5

Form very slender and more linear or parallel, the third antennal joint but very slightly longer than the fourth; elytral apices as in *villosus* throughout.....7

5—Elytra each transversely truncate at tip, the truncature limited by two equal straight slender spines. Body rather shining, piceous, the elytra, legs, antennæ and under surface paler; head very closely, strongly punctured; antennæ (φ) not quite as long as the body, very slender, sparsely pubescent, the spines small, rather flattened distally and with the internal, densely punctate opaque areas conspicuous; prothorax cylindrical, rather longer than wide, the parallel sides feebly, subevenly arcuate throughout; surface very coarsely, deeply and closely but not confluent punctured throughout, without even a median smooth spot and with rather coarse, short, pale and decumbent hairs and a few spots of dense yellowish pubescence, of which one at each side just before the middle is especially dense and well defined; scutellum well developed, densely pubescent, semicircular as usual; elytra three times as long as wide, parallel, straight at the sides, dehiscant at apex, fully one-half wider than the prothorax, with sparsely scattered, irregular and dense pubescence but without erect hairs; punctures rather sparse, not very coarse, about half the diameter of the pronotal punctures basally, becoming fine and feebly asperulate distally; under surface finely, sparsely punctate, the prosternum coarsely and densely. Length (φ) 15.0 mm.; width 3.4 mm. Levette Cabinet, unlabeled.

abruptus n. sp.

Elytra each with a small deep apical sinus, which is limited internally by a small fine sutural spicule and externally by a longer, though moderate, more or less incurvate spine or tooth.....6

6—Prothorax (σ^7 , φ) about as long as wide, more or less feebly rounded at the sides. Pronotum (σ^7) very finely, densely punctate throughout and dull, or (φ) with coarse, deep, clearly defined and very close or crowded punctures and with the sides minutely subprominent at the middle, the pubescence tending to form two narrow ragged vittæ; scutellum well developed; antennæ only moderately slender basally, with small spines, distinctly longer (σ^7) or shorter (φ) than the body; elytra tapering slightly, rounding apically at the sides to the apex of the lateral spines, coarsely, rather closely punctate basally, finely but not asperulately toward apex; pale hairs rather long, decumbent, somewhat sparse, the condensed clusters small, irregularly scattered and not well defined. Length 14.5 mm.; width 3.2 mm. Atlantic states to Iowa and Texas. **villosus** Fabr.

A—Similar to *villosus* but paler in coloration, dark testaceous, more shining but with the elytra distinctly tapering from base to apex and the antennæ more slender though otherwise nearly similar;

prothorax (σ^7) not quite as long as wide, the parallel sides very evenly and rather strongly arcuate throughout, the dense fine punctures and dull surface nearly similar, the hairs short, even and sparse, with a small irregular dense sublateral cluster just before the middle and at base; scutellum much smaller, less than a third as wide as an elytron; punctures similar but tending more to lineal arrangement; fifth ventral rounded at tip as in the preceding. Length (σ^7) 12.5 mm.; width 2.8 mm. Texas.

scuticularis n. subsp.

Prothorax larger, inflated, distinctly wider than long, scarcely so wide at apex as at base, with the sides strongly rounding medially, subconstricted at apex. Body rather stouter, the elytra cuneiform, pale red-brown throughout; head densely and strongly punctate, the antennæ a little longer than the body, rather rapidly stouter basally, the spines very short and stout, the subbasal joints very coarsely, confluent punctured; prothorax (σ^7) very finely, densely punctate and dull, with a narrow spot behind the centre, which is coarsely punctate, also with two very fine blackish sublateral lines at each side in basal half, which are coarsely sculptured; scutellum as in *villosus*; elytra two and two-thirds times as long as wide, about two-fifths wider than the prothorax, the decumbent pubescence rather long, coarse and abundant, the condensed patches larger than in the preceding forms, the punctures coarse and close basally, becoming very fine and sparse distally, the apices as in *villosus*; fifth ventral broadly rounded. Length (σ^7) 13.8 mm.; width 3.4 mm.

Wisconsin.....*lacustris* n. sp.

7—Male with the thoracic punctures small and very close but not contiguous, the fine interspaces shining, the smooth median line entire, dilated behind the middle, fine anteriorly, bordered throughout its length by coarse punctures, the sparse pubescence forming an elongate sublateral condensed spot anteriorly and another in same line at base, with a narrow smooth line having a few coarse punctures connecting the two. Body very slender, parallel, blackish, the elytra, legs and antennæ dark brown, the latter slender, not quite as long as the body, the third joint much shorter than the first, not longer than the fourth, the spines small, finely punctured; prothorax as long as wide; scutellum rather small; elytra just visibly tapering from the base, more than three times as long as wide, two-fifths wider than the prothorax, the condensed patches loose and indefinite; punctures coarse, deep, close, separated by their own diameters, smaller though still rather strong distally; fifth ventral broadly, evenly arcuate. Length (σ^7) 12.5 mm.; width 2.6 mm.

Levette Cabinet, unlabeled.....*medialis* n. sp.

A—Parallel, the elytra not evidently tapering, similar in general characters to *medialis*, except that the equally slender antennæ have the third joint slightly longer than the fourth though distinctly shorter than the first; prothorax (σ^7) fully as long as wide, parallel, the sides evenly and moderately arcuate, the surface coarsely, deeply and contiguously punctate throughout and evenly, sparsely and feebly pubescent, with a small smooth spot behind the centre;

elytra more than three times as long as wide, similarly coarsely and closely punctate but with the punctures more rapidly smaller and fine apically, the sparse vestiture but feebly and loosely nucleated; fifth ventral nearly semicircular. Length (♀) 12.0 mm.; width 2.5 mm. Canada (Ontario)... **canadensis** n. subsp.

B—Nearly similar to the preceding in general form but larger, piceous-black, the elytra brighter testaceous, the legs and antennæ dark red-brown; antennæ (♀) two-thirds as long as the body, very slender, finely, sparsely punctured basally, with moderate spines, the third joint a little longer than the fourth and correspondingly shorter than the first, which is more densely pubescent; prothorax (♀) about as long as wide, the sides parallel but broadly, feebly angulate at or just behind the middle, dull in lustre, the punctures much smaller than usual in the female and very dense, with a small impunctate area behind the centre, the pubescence short, coarse, closely decumbent, rather abundant, nubilously aggregated toward the sides and along the median line anteriorly; scutellum moderate; elytra parallel, more than three times as long as wide, two-fifths wider than the prothorax, the sinus at the tips as in the preceding but rather larger, the punctures but very little larger though much deeper than those of the pronotum, well separated, smaller but distinct apically; fifth ventral very broadly and feebly arcuate at apex. Length (♀) 14.5 mm.; width 3.1 mm. Florida.

densicollis n. subsp.

Male with the densely and finely punctate pronotum even, except a narrow short impunctate line just behind the centre; elytral apices as in *villosus*.....8

8—Male with the fifth ventral broadly and evenly rounded. Body very slender, parallel, pale red-brown, the elytra, legs and antennæ rather paler and testaceous; head with rather small, close punctures and a flat glabrous impunctate median line posteriorly, becoming finely impressed anteriorly; antennæ (♂) very slender, not quite as long as the body, loosely and not coarsely punctate, with small spines, the third joint slightly longer than the fourth and almost as long as the first; prothorax slightly wider than long, the sides broadly but sharply angulate at the middle, thence rather strongly convergent and straight to the base and less convergent and also perfectly straight to the apex, which is evidently wider than the base; surface very finely, densely and evenly though shallowly and irregularly punctate and dull, the pale yellowish hairs sparse but condensed into a subeven narrow sublateral line, bending outward slightly, from the apical margin to behind the middle, this line from the middle to the base feebly subumid, more coarsely punctate and again pubescent at base; elytra parallel, more than three times as long as wide, only very little wider than the prothorax, the punctures moderately close and strong, smaller apically, the vestiture rather sparse, feebly condensed. Length 11.0 mm.; width 2.4 mm. A single unlabeled male from the Levette collection..... **defectus** n. sp.

Male with the fifth ventral truncate at apex.....9

9—Form slender, parallel, the coloration and sculpture nearly as in the

preceding, the head more densely and strongly punctured and with trace of the frontal impunctate line; antennæ more developed, slender but rather more thickened basally, somewhat longer than the body, feebly spinose, the third joint but very little longer than the fourth and distinctly shorter than the first; prothorax smaller, slightly shorter than wide, broadly and evenly rounded at the sides, feebly constricted just before the base, which is as wide as the apex, finely, very densely and evenly punctate, the smooth spot behind the centre rather broadly oval and defined by coarser punctures; pubescence more diffused than in *defectus*, the sublateral and subentire vittæ broad and very feebly defined; elytra three times as long as wide and two-fifths wider than the prothorax, slightly narrowing from base to apex, the punctures strong and rather close, smaller but distinct apically, the pale decumbent hairs numerous, feebly nucleated and tending to form a few very irregular longitudinal vittæ; fifth ventral as long as the fourth, rounded at the apex, gradually becoming transverse medially. Length (σ^7) 11.8 mm.; width 2.6 mm. Texas.....**molliculus** n. sp.

Form not quite so slender, parallel, dark piceous-brown, the antennæ paler; head strongly, closely punctate, with a finely impressed stria throughout; antennæ nearly as in the preceding and somewhat longer than the body, except that the third joint is barely visibly longer than the fourth or shorter than the first; prothorax about as long as wide, parallel, with very evenly and moderately arcuate sides throughout, the basal constriction very feeble, the surface differently sculptured, dull, even, with rather large shallow close-set punctures and smaller close punctures filling the interspaces, the impunctate line behind the centre very narrow; pale pubescence rather coarse and abundant, unevenly diffused, the sublateral vittæ broad, irregular, loose and not defined; scutellum very densely punctate, semicircular; elytra parallel or very nearly, rather more than three times as long as wide, not over a fourth wider than the prothorax, strongly, not densely punctate, scarcely at all more finely apically, the irregular pale hairs tending to form three broad lines on each, separated by fine subtumid impunctate lines; fifth ventral abruptly and rectilinearly truncate at apex. Length (σ^7) 13.5 mm.; width 2.9 mm. Iowa (Keokuk)....**parallelus** Newm.

Externus will scarcely prove to be the same as *neglectus* Lec., though the size is about the same; the prothorax in *externus* is similar to that of *incertus* and not shorter; the form is more slender than in *incertus*, the antennæ notably more slender, but the outer apical spines of the elytra are similarly aciculate and not denticiform. My nine examples of *villosus*, three males and six females, from Texas, Iowa (Keokuk) and several parts of New England differ in such a way as to indicate a mixture of what may be subspecies or perhaps higher forms.* With the male type of *medialis*

* The prothorax normally is very nearly as long as wide, but one female example has this somite fully two-fifths wider than long.

I place a North Carolina female, with narrow and rather shining prothorax, having very moderate and rather evidently separated punctures; it may not be exactly conspecific. The species of *Hypermallus* are evidently very numerous but form a difficult study, and those above enumerated probably form but an insignificant part of them. Some of the Mexican species belong to other genera such as *Anoplium*.

Anoplium Hald.

The type of this group of species, which can very well assume generic rank, is one of the most aberrant in having the pubescence uniform and the antennal spines obsolete. An examination of the apex of the third antennal joint shows, however, a sharply marked and very acutely prominent angle at the position of the usual spine, proving that the difference is only one of degree and is not a radical departure in structure like that of *Tylonotus*, for instance. Besides *pumilum* and *inerme* of Newman, *mæstum*, *cinerascens* and *debile* of LeConte, and *truncatum* of Haldeman, all of which I have before me,—the last being different from *debile* and not identical as stated in our lists—the genus will comprise *punctatum*, *spurcum* and *imbelle* of LeConte, *grisescens* Bates, reported from southern Florida by Schaeffer, *cinereum* Oliv., *brevidens*, *simile*, *subdepressum* and *niveivestitum* of Schaeffer, and possibly *alienum* Lec., which is however aberrant, the elytra having long sparse flying hairs and being rounded at the apices, with spiniform sutural angle; if not of this genus it constitutes in all probability a distinct genus, still undescribed; it inhabits Arizona and is 14.5 mm. in length.

The following genus is rather puzzling in regard to its true position. It does not seem to have been studied by Linell or Schaeffer and is probably undescribed.

Geropa n. gen.

Body subparallel, rather slender, only moderately convex, not densely but uniformly pubescent, with very evenly fusoid, bi-truncate and completely unconstricted prothorax and very slender, completely unarmed and moderate antennæ, bristling with long slender hairs; the eyes and general facies are somewhat as in

Anoplium. The palpi differ but little in size, the last joint of the maxillary slender, somewhat enlarged and obliquely truncate at tip, the mentum very short and transverse, the anterior coxæ globular, very approximate, being separated by a fine lamina, the intermediate also narrowly separated by a long and very finely acuminate process of the mesosternum, extending at the sides to the mes-epimera, the met-episterna as in *Anoplium*, the femora slender, unarmed; tarsi small, very slender, loosely padded beneath, except the basal joint of the posterior, which is a little longer than the next two combined. Other characters may be mentioned in the following description of the type:

Geropa æquicollis n. sp.—Moderately slender and small in size, dull, the elytra rather shining, pale red-brown in color throughout, the under surface, legs and antennæ still paler; head and prothorax throughout with rather small, equal, shallow and polygonally crowded punctures; hairs sparse and decumbent and with others still sparser and erect; eyes separated by a little less than their width; antennæ (♀) extending nearly or quite to the elytral tips, very slender, not compressed, filiform, gradually very slightly thicker basally, the third joint one-half longer than the first or fourth; outer joints gradually shorter and thinner, the eleventh simple; prothorax very symmetrical, convex, distinctly wider than the head, as long as wide, the sides very evenly and rather strongly arcuate from the extreme basal margin to the apex, which is truncate and equal to the truncate base, both extremely finely margined; surface with a very fine and incomplete median impunctate line; scutellum small, rounded, minutely and closely punctate and moderately pubescent; elytra three times as long as wide, barely visibly wider than the middle of the prothorax, parallel, slightly dehiscent at apex, the apices narrowly and very evenly rounded, without trace of sutural angle; surface even, with moderately small and well separated punctures, becoming very fine distally and with a widely spaced series of slightly larger punctures basally at outer third; prosternum long as in *Hypermallus*; abdomen very finely, sparsely punctate and sparsely pubescent, the fifth segment evenly rounded, the first and second subequal. Length (♀) 8.8 mm.; width 1.9 mm. Texas (Brownsville),—Wickham.

There are a few long flying hairs on the elytra, confined principally to the lateral parts basally. This genus may take its place just before *Tylonotus* for the present.

Heterachthes Newm.

This genus is well distinguished from *Compsa*, with which it is united by Lacordaire, by having no trace of the fine dorsal carina of the subbasal antennal joints; the species allied to *ebenus* Newm.,

inhabiting exclusively the southern Atlantic states, may be distinguished as follows:

Elytra narrowly and obliquely sinuato-truncate at tip, the exterior angle very obtuse and blunt, the sutural slightly produced and acute...
 Elytra not truncate at tip, rounding regularly to the sutural angle, which is acute but not at all spiniform..... 3

Body larger and a little stouter, slender, parallel, subdepressed, deep black, the tibiæ, tarsi and antennæ picescent; lustre dull, the elytra alutaceous; eyes separated by evidently less than their width, the head and prothorax very finely, densely punctate, a narrow median line impunctate; antennæ (♂) about a fifth longer than the body, joints 3-6 abruptly much thicker than the very slender and filiform outer part, smooth and shining, with merely a few long erect hairs, the fourth joint four-fifths as long as the equal fifth or sixth and three-fourths as long as the third; prothorax fully two-fifths longer than wide, the sides parallel and straight anteriorly, gradually very feebly arcuato-convergent posteriorly to the feeble subbasal constriction, the median line slightly tumid just behind the centre, the sparse hairs decumbent and very minute; elytra a little more than three times as long as wide, two-fifths wider than the prothorax, minutely, closely sculptured and with some small sparse subasperate punctures, generally lineate in arrangement and bearing short, stiff and very inconspicuous fulvous hairs. Length (♂) 11.5 mm.; width 1.9 mm. Florida..... **ebenus** Newm.

Similar to the preceding but much smaller and more slender, dark piceous-brown in color, alutaceous, the sculpture throughout nearly similar; eyes less widely separated; antennæ similar but only slightly longer than the body, the third joint relatively thicker, the fourth shorter, only three-fourths as long as the fifth and two-thirds as long as the third; prothorax not quite so elongate, otherwise similar, except that the basal constriction is deeper and less obtuse and the median line faintly tumescent from behind the middle nearly to the apex; elytra similar throughout but relatively a little narrower, only about a third wider than the prothorax. Length (♂) 9.0-9.3 mm.; width 1.5-1.6 mm. Florida (Biscayne Bay),—Schwarz.

floridanus n. sp.

3—Similar to *ebenus* but much smaller, more slender and blackish-brown, the antennæ (♂) distinctly longer than the body, the joints similarly proportioned but not so elongate, the head and prothorax similarly sculptured; prothorax similarly elongate but with the sides broadly and feebly arcuate, converging slightly anteriorly and posteriorly to the similar subbasal constriction, the median line broad and flat behind the centre, without trace of tumidity; elytra similar though a little more shining, more finely sculptured and punctate and relatively narrower, only about a fourth wider than the prothorax, the sparse prostrate hairs similarly minute, the erect hairs nearly similar. Length (♂, ♀) 7.7-9.3 mm.; width 1.3-1.5 mm. North Carolina (Southern Pines),—Manee..... **exilissimus** n. sp.

The following is allied to *quadrifasciatus* Newm.; it represents a type differing greatly from the three preceding species in facies and sculpture, and, together with *nobilis* and *quadrifasciatus*, is probably subgenerically different:

Heterachthes fluviatilis n. sp.—Slender, depressed, parallel, pale testaceous throughout, subglabrous, the elytra with a few sparse punctures bearing very short stiff erect fulvous setæ; head but little darker, strongly, rugosely sculptured, the eyes more widely separated than in *ebenus*; antennæ (♂) as in *quadrifasciatus* in general form but with the third joint materially shorter and the fourth longer, the fourth being fully three-fourths as long as the third, while in that species it is only about three-fifths as long as the third; prothorax similarly smooth but shorter, only a little longer than wide, similarly biconstricted and with the apex even more obviously wider than the base, smooth and almost impunctate; scutellum very small; elytra rectilinearly parallel to the tips, three times as long as wide, only about a fifth wider than the apex of the prothorax, the apices evenly rounding to the sutural angles, which are right and rather blunt; surface of each having an oblique oval flavous anterior spot as in *quadrifasciatus* and another, very small and faint, near posterior third. Length (♂) 7.3 mm.; width 1.4 mm. Missouri.

Differs from *quadrifasciatus* in its narrower, more rectilinear and more depressed elytra, which round to the apices much more abruptly and posteriorly, in the much greater longitudinal distance between the elytral spots, which are more unequal in size and distinctly in antennal structure.

The very small scutellum, radically different sculpture and biconstricted prothorax are the principal generic characters separating these species from those of the *ebenus* type.

Malthophia n. gen.

Body very slender, punctate and uniformly briefly pubescent; head wider than the prothorax, vertical in front, the eyes coarsely faceted and very large, completely contiguous above, separated by rather more than a fourth the entire width beneath, deeply emarginate, bordering the antennal tubercles, which are large, prominent and very approximate, the anterior margin of the eyes slightly sinuate beneath near the mandibles, the latter small, stout, smooth, with a depressed pubescent external patch on each; palpi unequal, slender, the last joint acuminate, with the tip narrowly truncate; antennæ much longer than the body in the male, very finely filiform and simple, the basal joint short, stouter than the others, sub-

cylindric, flexed inwardly and prominent at apex; prothorax cylindric, longer than wide, much narrower than the base of the elytra, which are very long, gradually and feebly tapering from base to apex, with even punctate surface, the apices narrowly and evenly rounded, without sutural angle; anterior coxæ rounded, prominent, contiguous, their cavities widely open behind, the middle coxæ contiguous, large, reclined, conoidal and prominent; meso-sternum flat; met-episterna moderately wide, subparallel anteriorly, attenuated behind; legs very slender, the femora unarmed, moderately but suddenly inflated in more than apical half; tarsi short but very slender, cylindric, with close pubescence beneath, the first joint of the posterior longer than the next two, second parallel, twice as long as wide, the third but little wider than the first, longer than wide, moderately emarginate; claws very minute, slender, arcuate.

I am unable to place this genus very accurately in the scheme of Lacordaire, though in most of its characters it seems to accord best with the group "Phlyctenodides"; it is isolated there however because of its remarkably developed and closely contiguous eyes. The type is the following:

Malthophia oculata n. sp.—Slender, moderately convex, slightly shining, dark reddish-brown throughout, the legs and under surface more blackish; pubescence short, pale, rather coarse, decumbent, even and not dense, with some erect hairs in addition anteriorly; antennæ about three-fourths longer than the body, extremely slender, joints three to seven equal, very long, each nearly twice as long as the small and moderately stout, feebly sigmoid basal joint, the outer joints gradually but little shorter, the pubescence short, abundant, uniform and suberect with some long erect hairs beneath basally; prothorax a fourth longer than wide, cylindric, slightly constricted basally, the sides subtuberculate just behind the middle, the surface rather strongly, irregularly punctate and with two subbasal pits which are more shining and more clearly punctate; base rather narrower than the apex; scutellum small, parabolic, about as long as wide, nearly nude, scarcely punctate; elytra not quite four times as long as wide, nearly one-half wider than the prothorax, feebly tapering throughout, very gradually and moderately dehiscent from far before the middle, the surface even, not very coarsely but deeply, rather closely punctate and almost equally strongly so to the narrowly rounded apices; under surface finely but rather closely punctate, the fifth ventral arcuato-truncate. Length (σ^7) 10.0 mm.; width 1.8 mm. California (San Diego),—Ricksecker.

A single example of this anomalous species was sent to me some

time ago under the name *Aneflus linearis* Lec. No notes regarding its habits or food-plant have been received.

Tribe CALLICHROMINI.

Under this heading I would place all our remaining Cerambycids, except the Clytini and Lepturini and in addition a few aberrant and very limited tribes necessitated by aberrant forms, such as *Necydalis*. As a section of the subfamily it is distinguished from the preceding tribes principally by having the eyes very finely faceted.

Callimus Muls.

A genus of small slender species, with flattened entire elytra and finely faceted eyes. The species are rather numerous in the Pacific region and in Eurasia but are wanting on the Atlantic coast. The four following seem to be undescribed and constitute two well defined sections of the genus, represented by *ruficollis* and *cyanipennis* of LeConte, who erected for them the genus *Pilema*, said by Bates to be the same as *Callimus*:

Callimus longicollis n. sp.—Rather slender; head, antennæ, legs and under surface black throughout, the pronotum bright red, largely black at apex and base, the basal black area bilobed anteriorly; elytra bright steel-blue; head about as wide as the prothorax, with rather long neck, finely, closely, longitudinally punctato-rugose, the antennæ (♂) slender, filiform, not quite as long as the body, the third joint much shorter than the fourth and slightly shorter than the first, the erect flying hairs long but sparse; prothorax much longer than wide, obtusely tuberculate at the sides behind the middle, trituberculate on the disk, which is polished and impunctate throughout, very feebly tumid along the median line anteriorly, flat and rugulose toward the basal margin; scutellum small, subquadrate; elytra three times as long as wide, nearly a fourth wider than the prothorax, parallel and straight at the sides, conjointly semi-circularly rounded at apex, the sutural angles acute and very minutely prominent; surface alutaceous or subopaque, strongly, closely punctate, the punctures closely serial in arrangement, a little smaller apically; under surface finely chagrined and subopaque; prosternum red, the coxæ and their lateral angulation black; legs moderate, with long flying hairs. Length (♂) 6.2 mm.; width 1.3 mm. California (Kaweah).

Allied to *ruficollis* but smaller and differing in its impunctate and basally unimpressed prothorax, the latter with the sides converging from the post-medial rounded prominence to the apex and bisinuate, the apex rounded and narrower than the truncate base.

Callimus opacipennis n. sp.—Rather slender, much depressed, black, the prothorax above and beneath red, the elytra black, with a very faint greenish or violaceous tinge; abdomen, legs and antennæ throughout black; head with dense longitudinally anastomosing sculpture; antennæ (♂) not quite as long as the body, slender, slightly thickened distally, joints three to five increasing in length, the third scarcely more than twice as long as the second, similar in the female but a little shorter; prothorax as long as wide, narrower in the male, obtusely tuberculate near the middle of the sides, the apex feebly arcuate and as wide as the base; surface trituberculate, the median tubercle being more basal, not definitely punctate, the base transversely black but not impressed; elytra three and one-half times as long as the prothorax and distinctly wider, rectilinearly parallel at the sides, very obtusely rounded at apex, not dehiscent, the sutural angles dentiform; surface flat, opaque, the moderate punctures close-set, very deep and perforate, fine apically, the interspaces strongly and coarsely grano-reticulate; legs slender, the femora abruptly clavate, the posterior gradually enlarged, not so clavate, the erect hairs long and black. Length (♂, ♀) 4.5–6.2 mm.; width 0.8–1.4 mm. California (San Diego),—Ricksecker.

Differs from the preceding in its black opaque elytra and shorter prothorax. The sexual differences affecting the abdomen are extraordinary. In the male the abdomen is even in surface throughout and cylindrically convex, with simple transverse sutures, the first segment longer than the next two combined, the second longer than the third, the fifth very much shorter than the fourth and deeply sinuate. In the female the first segment is as long as the next three combined, the second strongly sinuate throughout at apex, with a very large transversely crescentic apical area densely clothed with fulvous tomentum, the third very short, strongly bowed to fit the preceding, the fourth rather long, unmodified, the fifth normal, transverse and broadly truncate. The male is very much smaller than the female, having the smaller of the above dimensions. I am unable to state whether these remarkable sexual differences are general among the California representatives of *Callimus*, apparently not having the female of the other species, but if so *Pilema* will probably have to be restored.

Callimus variipes n. sp.—Shining throughout and bristling with long erect flying hairs; head, pronotum and entire under surface as far as the abdomen deep black, the latter red throughout; legs very pale flavo-testaceous, the apex of the femora and tibial apex, also the apices of the tarsal joints, black; head narrower than the prothorax, with small and rather sparse punctures, becoming closely rugose at the sides of the neck; antennæ (♂) nearly as long as the body, often perceptibly shorter,

slender, black, shining and with long sparse setæ basally, opaque and minutely, densely, cinereously pubescent and picescent thence to the apex, the third joint much shorter than the fourth and scarcely more than twice as long as the second; prothorax as long as wide or a little shorter, more acutely but finely tuberculate at the sides near the middle than in the preceding, bituberculate on the disk, the tubercles more separated, the depressions strongly and loosely punctate, the median parts broadly flat anteriorly, the median part broadly, feebly tumid toward base; scutellum very small, wider than long; elytra two and one-half times as long as wide, a fourth to evidently less wider than the prothorax, tapering feebly from base to apex, slightly dehiscent but only at the apex, the sides rounding to the apices, the apical angles very acute and dentiform; surface dark steel-blue to greenish, polished, strongly and deeply, rather closely and irregularly punctate, with short stiff erect hairs, the punctures not serial in arrangement, the flanks concavo-deplanate posteriorly. Length (σ^7) 5.7-7.0 mm.; width 1.3-1.8 mm. California, (Mokelumne Hill, Calaveras Co.),—Blaisdell.

Distinguishable from *cyanipennis* Lec., to which it is rather closely allied, by the very different coloration of the legs. The elytra are dark steel-blue or greenish-blue and strongly shining.

Callimus dehiscens n. sp.—Similar in dorsal coloration and lustre to the preceding, the under surface dark piceous, with the entire abdomen red, the femora pale flavo-testaceous, black at tip, the tibiæ and tarsi throughout pale piceo-testaceous; long flying hairs abundant at the sides of the body and on the legs; head more strongly and closely punctate than in the preceding; antennæ (σ^7) similar in structure and vestiture but paler, piceo-testaceous, black only at and near the base, stouter distally in this and the preceding than in *longicollis*; prothorax as in *variipes* but more strongly and closely punctate in the concave parts, the lateral prominences more feeble, obtusely rounded and more posterior in position, the median line narrowly tumid near the apex but not at base, the wide post-medial subtumid smooth area distinct; elytra nearly as in the preceding but much more rapidly tapering from base to the apical arcuation, distinctly dehiscent for a much greater distance from the tips, with the sutural margin gradually rounding outwardly, the inner angle acute but not so prominent; punctures coarser and not so close; flanks steeply declivous throughout, not at all deplanate. Length (σ^7) 6.4 mm.; width 1.6 mm. California (Los Angeles Co.).

A second specimen before me is without indication of locality but is probably specifically identical with the type; it is nearly similar in every way, except that the elytral punctures are closer and not so coarse, the under surface, except the red abdomen, deep black, and the tibiæ of the same flavate color as the femora and similarly broadly tipped with black, but with the pale tarsal joints tipped with black as in *variipes*. This species is very distinct from *variipes* in elytral structure.

Rosalia Serv.

The single species known from North America probably varies as much, due to local conditions, as does the European *alpina*, and judging from the number of names that have been given the latter under the title "aberration," its plasticity must be exceptional. I have noted two especially conspicuous variations of our *funebis*, defined below, it being unnecessary to give very detailed descriptions, as the primary scheme of structure and ornamentation is the same in all.

Elytral bands of pale pubescence narrowing outwardly; mandibles small; antennæ (♂) rather slender, not quite one-half longer than the body, the last joint with the moderately demarcated apical process distinctly tapering to the very narrowly obtuse apex. Length 26.0 mm.; width 8.0 mm. Southern Alaska to Oregon. . . **funebis** Mots.

A—Rather larger, otherwise similar, except that the mandibles are notably larger and thicker, more irregular and more deeply impressed on their dorsal surface, the antennæ (♂) a little longer and thicker, with the process of the last joint rather less tapering and more broadly obtuse at tip, the last joint (♀) as long as the preceding. Length 27.0–33.0 mm.; width 7.0–8.4 mm. California.

mandibularis n. subsp.

B—Narrower in form, the prothorax similar but not so transverse; antennæ (♀) shorter, not longer than the body, the last joint shorter than the preceding; transverse pale bands of the elytra much wider, the posterior not at all narrowed externally. Length (♀) 26.5 mm.; width 6.7 mm. New Mexico (Jemez Springs).

acomana n. subsp.

There is a good deal of variation in the maculation of the elytra; in the Washington State and northern Oregon form, which I have identified as *funebis*, there is much more of the white ornamentation than in *mandibularis*, where the bands are narrow; in one example, from Tacoma, there is a long white humeral lunule, which sends off a quadrate inner ramus, and the posterior band is connected with the apical white patch on one elytron and nearly so on the other. In *acomana* there is a humeral streak of white, which is connected with the anterior band by a slender ramus, and the anterior band is angularly produced posteriorly along the suture. But only characters of a structural nature are employed in defining the above subsidiary forms, which I think have more the nature of subspecies than aberrations or ornamentation variants.

Callichroma Latr.

The species of this genus are frequently large and of brilliant coloration, though generally monochromatic above; the antennæ are deep black and very long in the male; the eyes are deeply emarginate and finely faceted.

Callichroma smaragdina n. sp.—Rather large, only moderately convex, very bright uniform green above, paler metallic green beneath, the abdomen rufo-ferruginous, the femora testaceous, slightly tipped with black throughout, the tibiæ and tarsi black; head, antennæ and prothorax nearly as in *plicata*, except that the strong transverse rugæ of the pronotum are wanting and replaced by fine and separated, scarcely visible plications; elytra similar, sometimes less tapering with the sides very feebly converging from base to the apical arcuation, the surface with the two fine raised lines more evident, especially the external; under surface similar; male with the fifth ventral deeply and broadly, angularly emarginate, the apex of the angle blunt. Length (σ^7) 30.0–32.0 mm.; width 7.9–8.2 mm. Texas.

Allied to *plicata* Lec., but larger, brighter and purer green in color, the elytra less tapering, the pronotal plicæ scarcely evident and differing especially in the angulate form of the notch at the end of the male abdomen, this being evenly parabolic in *plicata*.

***Callichroma compressipes** n. sp.—Male more convex, the elytra strongly tapering from base to apex, rather dull in lustre and dark blue-green throughout above, polished and bright golden-green throughout beneath; two anterior femora red, black toward base and at tip, the posterior red, black in apical two-fifths, the tibiæ and tarsi black; prothorax as in the preceding; elytra two and two-thirds times as long as wide, very much narrowed from base to apex, cuneiform, densely punctate as usual and with small ruguliform undulations, also with feeble and indistinct, approximate and slightly convex lines, the hairs very short and black, abundant and conspicuous; hind femora obliquely flattened above, not quite twice as long as the intermediate, the hind tibiæ broad, strongly compressed, straight internally, broadly and evenly arcuate externally, broadly concave throughout on the under surface; notch of the fifth ventral parabolic; prosternum concave, transversely plicate. Length 33.5 mm.; width 8.8 mm. Guatemala (Esquintla).

The legs are colored nearly as in the preceding and *plicata*, except that the anterior and middle, but not the posterior, femora are blackish basally, as well as tipped with black and the very much longer hind femora are black in distal two-fifths; the broad compressed hind tibiæ and shining green abdomen are of course very different.

***Callichroma regalis** n. sp.—Still larger but of similar form, the elytra

very strongly cuneiform; upper surface very dark and obscure greenish-blue and with dense velvety lustre; under surface bright metallic greenish-blue throughout and strongly shining; legs colored exactly as in the preceding; prothorax similar in form to the two preceding, except that the anterior margin, instead of being prominent and rather narrowly rounded medially, is broadly arcuato-truncate, the surface almost even, densely punctate but with the short black hairs dense and distinct as on the elytra, the latter as in the preceding in form but darker and much more densely black velvety-pubescent, the outer raised line feebly shining; abdomen very gradually and acutely tapering, the notch very broadly parabolic, not so deep as usual; hind femora and tibiæ as in the preceding, except that the outer contour of the tibiæ is broadly arcuate in apical half only, becoming straight and gradually converging to the base in about basal half; antennæ (σ^7) very long, much more than twice as long as the body, or (♀) barely at all longer than the body. Length 40.0-41.0 mm.; width 10.4-10.6 mm.; length of the last antennal joint (σ^7) 27.0 mm. Mexico (Guerrero),—Baron.

I cannot identify either of the last two species with any of the Mexican and Central American forms enumerated by Bates, and therefore conclude that they are present as nondescripts in various collections.

Dendrobias Serv.

In this genus of massive shining glabrous longicorns, the species adhere closely to the generic model and are but slightly diversified. *Dendrobias* is allied closely to *Trachyderes*, differing only in having elongate mandibles in the male, larger and broader tarsi, and in style or type of ornamentation; these generic differences might seem rather unimportant but are apparently valid among such very non-plastic forms. Five species seem to be evident as shown by my material as follows:

Posterior pale spots of the elytra, when not expanded, elongate, subparallel and extending from the apex along the median line of each elytron not quite to the middle; third antennal joint wholly black, the antennæ more slender and less compressed in both sexes; scanty hairs of the under surface notably long; prosternum of the male densely and strongly, irregularly punctured, with the usual median smooth line sharply defined. Length (σ^7 , ♀ —excluding mandibles) 23.5-26.0 mm.; width 8.5-9.5 mm. Mexico (Guerrero). [♀ = *D. quadrimaculatus* Dup.].....***mandibularis** Serv.

Posterior pale spots, when in correspondingly reduced stage, not elongate and subparallel but shorter and broadly oval, occupying nearly the entire width of each elytron posteriorly, rounded anteriorly, sometimes broadly fused with the anterior subquadrate spots; hairs, on the very limited portions of the under surface on which they appear,

- very short and inconspicuous; third antennal joint nearly always having a large fulvous spot, homologous with the basal pale part of the succeeding joints to the apex; joints seven and eight in the female almost wholly dark in color as in the preceding. 2
- 2—Pale spot of the third antennal joint always large and well developed, extending from a little beyond the middle of the joint nearly to the base; normal condition of the elytral pale spots separated, the suffused condition exceptional; size larger. 3
- Pale spot of the third joint always small, sometimes obsolete; normal condition of the elytra almost entirely pale, though similarly black at base; size somewhat smaller. 5
- 3—Body narrower in form, pale testaceous in color, the elytra with the dark areas, which are normally black, well separating the posterior spots from the broad anterior band in specimens at hand; scutellum testaceous; prothorax relatively much smaller than usual; irregular punctures of the male prosternum well separated. Length (σ^7 , ♀) 20.0–22.0 mm.; width 7.3–7.8 mm. New Mexico,—Snow.

debilicollis n. sp.

- Body broader in form, deep black throughout, except the pale elytral and antennal maculation, the abdomen as usual pallescent apically. 4
- 4—Hind body suboblong, only slightly narrowed from the base, the elytra broadly rounded at apex; scutellum not more than half as wide as the distance thence to the humeri; smooth portion of the mesosternum (♀) longer than wide, the eighth antennal joint (♀) barely one-half longer than wide. Length (σ^7 , ♀) 27.5–28.0 mm.; width 9.5–10.0 mm. Texas,—Dunn. **virens** n. sp.
- Hind body strongly cuneiform, very rapidly narrowed from the base, the elytra each very narrowly subtruncate at apex; scutellum more than half as wide as the distance thence to the humeri; smooth portion of the mesosternum rather wider than long; eighth antennal joint (♀) nearly twice as long as wide. Length (♀) 24.8 mm.; width 9.0 mm. Lower California. **peninsularis** n. sp.
- 5—Form somewhat narrow, the elytra moderately narrowed from the base, more so than in *virens* but less than in *peninsularis*, the pale elytra sometimes having a small marginal maculation behind, and the suture another at, the middle,—showing derivation from the quadrimaculate type—black to piceous-black; pale spot of the third antennal joint very slightly behind the middle and more toward the outer side; scutellum rather less than half as wide as the space thence to the humeri; punctures of the male prosternum small and widely separated, the median smooth line very much broader and less sharply defined than in any of the preceding. Length (σ^7) 20.0–24.0 mm.; width 6.7–8.0 mm. California (near Yuma).

reductus n. sp.

Three of the males of *reductus* before me have the long slender mandibles tolerably uniform and of the usual apically inflexed form, but the fourth male is anomalous, having mandibles that differ but little from those of the usual female type, being small, thick,

rugose, dentate within and wholly without indication of the apical inward flexure of the normal male. This indicates that the male mandibles vary in development, as in so many Prionids and elsewhere when a special part not of direct sexual utility is unusually developed sexually.

Lissonotus Dalman.

Here again the species adhere very closely to a common type of structure and ornamentation, so that characters, generally of subordinate value, become enhanced in much the same way as those serving to distinguish the genera in this part of the series. The following is probably the smallest known species:

Lissonotus lucanus n. sp.—Much more slender than usual, strongly convex, deep black throughout and polished, almost glabrous; eyes separated by about their own width, the front very finely, sparsely punctate; antennæ (♀) three-fourths as long as the body, strongly compressed and compact as usual but relatively narrower, the subapical joints fully as long as wide, except the tenth, which is a little shorter than wide; prothorax longer than usual, two-fifths wider than long, almost evenly rounded at the sides and without the submedial protuberance of the other species, finely, very remotely punctate, the larger scattered punctures also small and inconspicuous, the punctures on the flanks sparse and much less conspicuous than usual, though strong, the erect hairs of the flanks much less numerous; scutellum acutely triangular, one-half longer than wide; elytra narrowed rapidly from the base, the apices narrowly rounded. Length (♀) 12.0 mm.; width 4.0 mm. Lower California (San Jose del Cabo).

Differs from *multifasciatus*, examples of both sexes of which I have from Guerrero, in its much smaller size and more slender form, less transverse and laterally non-tuberculate prothorax, finer and sparser punctures and shorter and more slender legs; it has the same transverse white elytral fascia just before the middle. This species cannot be the same as that called *puncticollis* by Bates, after Dupont in the Sallé collection, from Cape San Lucas and Mexico, for the punctures are notably finer and feebler than usual. I have a specimen labeled simply "Lower California," however, in which the thoracic punctures, while sparser than in *multifasciatus*, are stronger; this may possibly be the *puncticollis* of Bates; it is much larger than *lucanus* and more elongate than *multifasciatus*, and has joints eight to ten of the female antennæ much shorter than wide and with lateral thoracic protuberance, although the

prothorax is less transverse than usual. In the female of *multifasciatus* the eyes are separated by one-half more than their width, the punctures of the front being coarse deep and much closer than in either *lucanus* or the female example above identified very doubtfully as *puncticollis*.

Stenaspis Serv.

The following species are allied respectively to *solitaria* and *verticalis*, but differ in each instance in structural characters that cannot be overlooked:

Stenaspis lugubris n. sp.—Body similar to *solitaria* in the uniform deep black coloration, sculpture and lustre throughout, but smaller in size and more parallel in form; antennæ (♂) shorter, not more than a third longer than the body, the fourth joint but little shorter than the fifth, the last but feebly arcuate; head much smaller in size; prothorax similar, except that the lateral tubercles are less prominent and more obtuse; elytra shorter and only feebly narrowed from the base, the apex more broadly rounded; punctures of the sharply defined transverse prosternal patches in the male small and well separated, the patches widely separated, the intermediate surface simply coarsely and sparsely punctate, not impressed; legs shorter and more slender, without the feeble bluish reflection of *solitaria*; hind femora with a medial series of about three coarse foveæ on the outer face. Length (♂) 23.0–26.0 mm.; width 7.0–7.7 mm. Arizona (Sta. Rita Mts. and other points in the southern part of the State).

In *solitaria* the size is much larger and the form stouter, the elytra in the male longer and more rapidly narrowed from base to the relatively narrower apex, the antennæ longer, with the fourth joint more distinctly shorter than the fifth and the last joint very strongly curved and with relatively longer appendage, the legs long and stout, the hind femora simply evenly and sparsely punctate on the outer face and without trace of the series of foveæ; finally, the anterior coxæ are almost twice as widely separated and the sharply defined punctured spaces of the male prosternum are more closely punctate and very much less widely separated, the intermediate surface with a large, circular and shallow foveiform pit.

Stenaspis arizonicus n. sp.—Form, dorsal coloration and lustre throughout as in *verticalis* but a little narrower; head and prothorax similar in almost every way, but with the antennæ (♂) shorter, slender, the joints, especially outwardly, very much less elongate, the last shorter and less slender; elytra nearly similar in general form but with the punctures finer and very much denser, transversely coalescent, producing a vermiculately

rugulose sculpture; tarsi smaller and less dilated; punctuation of the sharply defined transverse areas of the male prosternum fine, extremely dense and coalescent, with dull lustre, the patches rather narrowly separated, their inner margins moderately diverging antero-posteriorly. Length (♂) 24.8 mm.; width 7.5 mm. Arizona (Baboquivari Mts.),—Snow.

The various forms of the *verticalis* group represented in my collection at the present time may be briefly outlined as follows, from the male in every case:

- Basal joint of the antennæ wholly black in the male, generally red basally in the female.....2
- Basal joint suffused with red basally in both sexes.....3
- 2—Under surface entirely dark red-brown in color; elytral punctures small, dense, vermicularly coalescent; antennæ slender, one-half longer than the body; inner margins of the prosternal densely punctate areas but feebly diverging antero-posteriorly. Length 24.8 mm.; width 7.5 mm. Arizona.....**arizonicus** Csy.
- Under surface wholly deep black, excepting a sharply defined median area of the metasternum and the entire abdomen, which are dark red; elytral punctures much coarser, everywhere well separated, the two discal impunctate lines much better defined, the punctures along their edges sparsely mingled with some that are a little coarser; antennæ notably stout, four-fifths longer than the body; densely punctate areas of the prosternum with their inner margins very rapidly and widely diverging antero-posteriorly. Length 27.0 mm.; width 8.0 mm. Mexico (Guerrero),—Baron. . . .***validicornis** n. sp.
- 3—Elytra relatively more elongate, with the sides sensibly more rapidly converging from base to apex, strongly shining, the punctures rather small, uniform throughout and widely separated, the impunctate lines feebly defined and partially obliterated; coloration of the under surface and nature of the prosternal patches nearly as in *validicornis*, the antennæ similarly long but not so thick basally, only a little thicker than in *arizonicus*. Length 22.0–28.0 mm.; width 6.8–8.8 mm. Mexico (Iguala in Guerrero).....***verticalis** Serv.

The females, of which I have exponents in *validicornis* and *verticalis*, are sculptured as in the males on the upper surface and are a little shorter and more parallel in form, the coloration of the under surface rather more obscure and the antennæ only about as long as the body. The very dense sculpture of the elytra in *arizonicus* is a striking differential character; in *validicornis* the punctures are much less close, not at all confluent and about as sparse as in *verticalis* but a little stronger.

Crioprosopus Serv.

The following species is allied to *iridescens* White, but seems not to have been included in the material sent by Mr. Harford to Mr. Bates.

***Crioprosopus præstans** n. sp.—Stout, convex, dark rufo-piceous and dullish anteriorly, the elytra highly polished, not translucent, bright metallic green, the entire under surface and legs dark red-brown, the femora indefinitely blackish distally; head deeply sulcate to the hinder line of the eyes, finely, sparsely punctate, the antennæ black, a fourth longer than the body; prothorax transverse, convex, very coarsely, densely punctate, obtusely prominent and subtuberculate at the sides behind the middle, the median line depressed, flat, finely, sparsely punctate, gradually wider basally and with a short axial carina medially, the sublateral subbasal impressions simple, deep and longitudinal, the inner curving and obsolescent anteriorly and inwardly about the medial convexity, not reaching the median line; scutellum black, rufescent medially, very acute, more than twice as long as wide; elytra four time as long as the prothorax and not wider, feebly tapering, smooth, becoming slightly crumpled basally, minutely, sparsely punctured throughout, the impunctate lines well defined, disappearing posteriorly, the apices obliquely truncate; prosternal patches of the male sharply limited, separated by a narrow parallel line, very coarsely, closely punctate, the interspaces flat and minutely punctulate, the patches not extending posteriorly between the coxæ. Length (♂) 36.0 mm.; width 11.2 mm. Mexico (Guerrero).—Baron.

The following may be regarded as a subspecies of *præstans*:

***Crioprosopus semiplicatus** n. subsp.—Slightly narrower and more parallel, nearly similar in coloration, except that the metallic lustre of the highly polished elytra is still brighter and deeper green, the red of the under surface paler, the legs relatively darker throughout; head similar, the antennæ much shorter barely longer than the body, the prothorax similar, except that the coarse punctures are still denser, the median line with a transversely rhombiform flat medial dilation, and that the inner of the subbasal impressions does not curve anteriorly and inwardly; elytra similar but more crumpled and rugose basally and with the inner of the impunctate lines less distinct; punctures of the prosternal patches, the latter similarly separated by a narrow parallel line, as coarse as in *præstans* but still denser, without flat interspaces and more extended posteriorly, entering somewhat between the coxæ; legs more strongly punctured. Length (♂) 31.0 mm.; width 9.0 mm. Mexico (Guerrero).—Baron.

I am unable to determine just what relationship exists between these two forms but it certainly seems to be of a higher order than individual variation. The inner face of the legs is not thickly clothed with ferruginous hair, as is stated of the Guatemalan *iridescens* by White.

Tragidion Serv.

A very well defined genus, represented by numerous species in the temperate regions of North America. The prothorax is larger in the male than in the female and generally clothed with thick erect shaggy pubescence. The species known to me may be defined briefly as follows:

- Elytra corrugated. 2
 Elytra even, not corrugated, each with three very fine, unembossed, thread-like lines, the prothorax in both sexes smaller than usual. . 7
 2—Prothorax sharply and prominently angulated or spinose at the sides; elytral corrugation strong; antennæ varicolored. 3
 Prothorax less narrowed, fuller at the sides and more rounded anteriorly and with very small lateral tubercles. 4
 3—Body larger and stouter, black, the vestiture of the prothorax and legs with pale bluish reflection; elytra fulvous-red, blackish at the extreme base. Male with the antennæ long and rather stout, the joints, except the first two and last four, red, with swollen black apices, the prothorax across the very acute post-median tubercles as wide as the elytral base; anterior femora excavated at the lower edge of the outer face from base to beyond the middle; punctures of the subglabrous prosternum very coarse; elytra rapidly narrowed from base to apex. Female with antennæ much shorter than the body, stout, broadly compressed, serrate apically, colored as in the male but with the outer five joints black; prothorax with less prominent tubercles and narrower than the elytra, the latter but very feebly narrowed from the base; anterior femora simple, the prosternal punctures very fine and dense, the bluish hairs long and dense. Length (♂, ♀) 28.0–31.0 mm.; width 8.5–9.5 mm. Lower California. [*T. annulatum* Csy., nec Lec.] **peninsulare** Schæf.
 Body nearly as large, velvety-black, first two joints of the antennæ black, the remaining joints fulvous, with their apices black, the third and fourth joints very densely clothed at tip with black hairs; prothorax strongly angulated at the sides behind the middle; elytra fulvous, broadly black at base; cornuous processes between the antennæ more conspicuous than in *coquus*. Length 27.5 mm. Mexico (Sonora) **annulatum** Lec.
 Body notably smaller and narrower, nearly as in *peninsulare*, except that the thoracic and crural vestiture is deep black and not bluish and that the elytral base is more extensively black. Female with the antennæ three-fourths as long as the body, rather slender and not broadly flattened, deep black throughout; tibiæ similarly compressed, the legs, however, shorter and less stout; prosternum finely, densely punctate posteriorly, transversely rugulose anteriorly, moderately pubescent; elytra perceptibly narrowed from the base; lateral thoracic tubercles median and not post-median as in the two preceding. Length (♀) 21.0 mm.; width 6.3 mm. New Mexico (Fort Wingate),—Shufeldt. [*fulvipenne* Csy., nec Say].

hirsuticolle n. sp.

- 4—Elytral corrugations sharply marked, strong; antennæ varicolored. . . 5
 Elytral corrugations obtusely wave-like and feebler; antennæ black throughout in both sexes. 6
- 5—Body larger and less slender, parallel; under surface and legs deep black, the anterior tibiæ rufescent except basally and apically; head and pronotum feebly rufescent, elytra fulvous-yellow, broadly black at base; antennæ (♂) two-thirds longer than the body, only moderately slender, the basal joint rufescent, black apically, second dark rufous, all the remainder rufous, becoming black at their extreme apices, the eleventh feebly blackish just before the apical prolongation, which is distinctly differentiated though rigidly attached, its apex but feebly arcuate, not enlarged and only minutely tipped with black; prothorax as in *coquus* throughout but with the erect black hairs shorter and less dense; elytra as wide as the prothorax, parallel, conjointly semicircular at apex, but slightly more than twice as long as wide; prosternum with strong, irregular, close-set punctures, much less coarse than in *peninsulare*; abdomen minutely, very densely punctate and subopaque. Length (♂) 20.0 mm.; width 5.8 mm. Arizona (locality unrecorded).

densiventre n. sp.

Body smaller and more slender, the elytra more elongate, piceous-black, the elytra bright fulvous-yellow, black only at the extreme basal margin; antennæ (♂) nearly similar in coloration but shorter and much more slender, a third to nearly one-half longer than the body, the first two joints black, the black apices of the remainder more extensive than in the preceding; prothorax similar but relatively smaller, the vestiture similarly rather short and only moderately dense, the punctures rather less irregular in form and the three discal callous elevations much less distinct; elytra fully as wide as the prothorax, parallel, broadly rounded at apex, nearly three times as long as wide; prosternum less coarsely and more loosely punctate but opaque; abdomen more shining, the very minute punctures well separated and smaller; legs shorter and more slender, the hind tibiæ almost similarly compressed and more so than in any form of *coquus*; legs black or piceous-black throughout. Length (♂) 14.0-16.0 mm.; width 3.8-4.2 mm. Utah (southwestern),—Weidt.

auripenne Csy.

- 6—Hind tibiæ straight; arcuate tip of process of last antennal joint not dilated. Deep velvety-black throughout, the elytra each with a moderate elongate-oval submarginal spot well before the middle, pale orange, the spot sometimes extending across, gradually narrowing to the suture, at least in the female, where it is always more extended than in the male. Male with the antennæ three-fourths longer than the body, slender, the last joint more than one-half as thick as the third, with the apically arcuate appendage very strongly differentiated, apparently forming an additional joint but rigidly connected; prosternum strongly, deeply, irregularly and very densely punctate, opaque; abdominal punctures fine but strong, very dense; pronotal punctures strong, extremely dense and subconfluent. Female rather smaller, with the antennæ slender, as long as the body,

the last joint short, with constricted conical apex, the legs more slender; thoracic punctures above and beneath extremely fine and dense. Length (σ^7 , ♀) 18.0–22.0 mm.; width 4.8–6.1 mm. North Carolina (Southern Pines),—Manee.....**coquus** Linn.

A—Similar but brownish-black, more slender in form, the elytral pale spot always much smaller. Male with the antennæ similar but still more slender, very finely filiform apically, the last joint scarcely one-half as thick as the third, the appendage feebly differentiated; prosternal and pronotal punctures as strong but distinctly separated, the interstices very finely, closely punctate; abdominal punctures finer and less dense. Female much smaller than the male, differing as in the same sex of the preceding. Length (σ^7 , ♀) 16.0–21.0 mm.; width 4.5–5.5 mm. New Mexico (Las Vegas) and Texas.....**filicorne** n. subsp.

B—Similar in size to *coquus* but broader and rather less convex, velvety-black, the elytra fulvous, blackish at the basal margin, generally shaded with a slightly more obscure fulvous or brownish tint outlining much the same extended maculation as in the female of *coquus*; body much stouter and with relatively larger prothorax than in *filicorne*, the antennæ nearly similar, though not so slender; vestiture of the almost similarly very densely punctate pronotum much sparser. Length (σ^7 , ♀) 18.5–24.0 mm.; width 5.5–7.2 mm. Texas.....**fulvipenne** Say

C—Smaller and much more slender than the preceding, with notably shorter and very much more slender legs and more slender tarsi, similarly colored and sculptured, except that the pale fulvous-yellow elytra have each a brown cloud, truncate before the middle, where it extends almost to the suture, thence receding posteriorly but attaining the suture at apex; antennæ very slender but rather shorter, the outer joints especially more abbreviated. Length (σ^7) 16.5 mm.; width 4.4 mm. Texas.....**nubifer** n. subsp.

D—Still smaller, slender, parallel, colored and sculptured throughout nearly as in *fulvipenne*; antennæ as in *nubifer*; legs still shorter, slender, the tarsi notably shorter than in any of the preceding, the posterior scarcely more than half as long as the tibiæ; elytra much shorter than in *nubifer*, but little more than twice as long as wide. Length (σ^7) 14.8 mm.; width 4.0 mm. New Mexico (Las Vegas).

levipes n. subsp.

Hind tibiæ inwardly bent toward tip; appendage of last antennal joint in the male more arcuate than usual, with the tip gradually swollen or subbulbiform. Body larger and stouter than in *coquus* or any of the subordinate forms, the corneous processes between the antennæ more developed and the tarsi somewhat longer and stouter, dull smoky-black throughout, the elytra each with a very minute point of orange tint near the margin behind basal fourth; general form and sculpture as in *coquus*, the vestiture shorter, thinner and much less conspicuous; legs longer; prosternal punctures (σ^7) as in the preceding forms, the antennæ as in *coquus* but still more elongate and with longer basal joint. Length (σ^7) 26.5 mm.; width 7.3 mm. Texas.....**apicatum** n. sp.

7—Broader, more oblong, deep velvety-black, the elytra wholly pale fulvous-orange; prosternum differing sexually as in the preceding species, the pronotum however similarly minutely, densely punctured in both sexes; lateral spine but little behind the middle, stronger and more abruptly formed than in the *coquus* group but less developed and less triangular than in the *annulatum* group; elytra much wider than the prothorax in both sexes, only twice as long as wide, parallel, broadly rounded at apex; legs long, the tarsi more dilated than in any of the preceding; abdomen minutely, extremely densely punctate; antennæ varicolored in both sexes, slender, black distally. Length (♂, ♀) 24.0–27.0 mm.; width 7.4–8.2 mm. **armatum** Lec.

The remarks of Mr. Charles Schaeffer (Bull. Bk. Inst., I, p. 339) leave me in somewhat dubious frame of mind as to what *annulatum* Lec., may really be. I had not consulted LeConte's original description before publishing the tabular statement of the genus (Ann. N. Y. Acad., VII, 1893, p. 586) and trusted for the identification of the species entirely to the comparison which I had made with the specimens standing under that name in the LeConte cabinet, which so far as can be recalled included the Lower California form which I described as *annulatum*; this was also the interpretation of *annulatum* apparently held by Lacordaire (Gen. Col., IX, i, p. 174). It is the largest and most conspicuous species of the genus, but as I now perceive, agrees with the original description of *annulatum* simply in the very prominent lateral angles of the prothorax placed far behind the middle and in the coloration of the male antennæ.

It seems probable, in this light, that the Fort Wingate female with very prominent but almost perfectly median lateral thoracic angles, which served to represent *fulvipenne* Say, in my sketch of the genus, principally because of its entirely black antennæ, is a different species, more closely allied to *annulatum* than to *fulvipenne*, the latter doubtless being the well known pale variety of *coquus*. Mr. Schaeffer states, with ample series at hand, that the male antennæ of *annulatum*, of which I insert above the original description, are varicolored throughout as described by LeConte, while those of the female are much less so and may be wholly black, truly a rather remarkable circumstance in view of the virtually similar coloration of the male and female antennæ of *peninsulare*, although there is always somewhat more black in the female than the male antennæ. *Peninsulare* is announced as a variety of *annulatum* by Mr. Schaeffer, but seems to differ greatly in the female antennæ;

at any rate they are both widely different from *hirsuticolle* in position of the thoracic angulation at the sides and in the very much more slender antennæ of the latter, irrespective of coloration.

Under my description of *auripenne* (l. c.), I confused two distinct though allied species as defined above. The true *auripenne* is a small and slender, delicate species, with minute and inconspicuous lateral thoracic tubercles and inhabits only southwestern Utah so far as known. The other, named *densiventre* in the above statement, and from Arizona, is materially larger, stouter and with much longer and thicker legs, but not so large as *annulatum*, although agreeing in the antennæ; it also has small thoracic tubercles as in *coquus*, which could in no way answer to LeConte's description of *annulatum*. That either of these species could be the true *annulatum*, as definitely stated by Mr. Schaeffer, is therefore wholly inadmissible.

Purpuricenus Serv.

The following species seems certainly more appropriately placed in *Purpuricenus* than in *Metaleptus*, the latter as represented by such forms as *angulatus* and *batesi*, being of distinctly different facies. In describing *batesi* it is singular that Dr. Horn did not draw attention to the remarkable sexual differences, the male being much more slender than the female, the elytra gradually and arcuately narrowing from slightly behind the middle, and not abruptly broadly rounded at apex, and the prothorax less transverse and more parallel; in the female it is very rapidly narrowed anteriorly before the tubercles, giving a totally different habitus.

**Purpuricenus lecontei* n. sp.—Subcylindric, convex, deep opaque black and everywhere very finely, densely but not deeply punctate and with very short, fine, inconspicuous hairs, more distinct on the under surface and erect and bristling on the flanks of the prothorax; elytra throughout bright and pure scarlet, with a dense opaque velvety lustre and finely, not densely punctate, with three feebly marked discal lines on each, not attaining the apex; head finely, densely punctured and opaque, clothed with pale erect pile, the antennal tubercles not elevated as they are in *humeralis*; antennæ very slender, not as long as the body, with rather stout basal joint, the third two-fifths longer than the fourth, four to seven decreasing just perceptibly, the remainder missing in the type; prothorax three-fifths wider than long, the apex two-thirds as wide as the base; sides angulate and acutely tuberculate just behind the middle, thence converging and nearly straight to base and apex; surface opaque, subglabrous, the fine and feeble punctures parted along the median line;

I can discover little or no difference between *Entomosterna* and *Ischnocnemis*, except the single character selected above to distinguish them; this will probably serve however, as the presence, absence or disposition of the ivory vittæ of the elytra is of greater importance generically than has apparently been admitted. *Cyphosterna* Chev., is another Mexican genus closely allied to *Ischnocnemis*, but having the prothorax transverse and finely tuberculate at each side; it also has two ivory vittæ on each elytron.

Parabatyle (n. gen.) seems to be necessary for the type cited above. Bates thought it might go in *Batyle* or else, because of the longer antennæ, be made the type of a distinct genus; I have adopted the latter suggestion.

Batyle Thoms.

This genus was placed very far from *Ischnocnemis* in the arrangement of Lacordaire, but the position assigned it in this neighborhood by LeConte, Bates and others seems to be far more rational; our species as hitherto considered form two genera, defined above from the form of the scutellum, scheme of ornamentation, sculpture and vestiture. The species of *Batyle*, as here limited, may be known as follows; the coloration—black with the prothorax bright red throughout—is similar in all:

Elytral punctures becoming widely separated and much coarser basally. . . 2
 Elytral punctures dense throughout, only very little larger basally; body stouter. 4
 2—Prothorax widest near the base, the sides rapidly rounding to the latter, gradually feebly converging and feebly, subevenly arcuate thence to the apex, which is much narrower than the base; surface strongly polished, the under surface deep black throughout, only the inflexed sides of the pronotum red; antennæ (♂) slender, about as long as the body, the third joint a third longer than the fourth, which is barely visibly shorter than the fifth, the last distinctly longer than the tenth, with a short and feeble prolongation; prothorax but slightly wider than long, with the usual long erect bristling hairs, the punctures strong and only moderately sparse; scutellum transversely parabolic; elytra two and one-half times as long as wide, a little wider than the prothorax, gradually subprominent at the sides basally, the punctures everywhere strong and rather well separated, decidedly coarse and distant basally, the surface transversely rugulose near the apex; hind thighs extending distinctly behind the elytra, the legs slender. Length (♂) 8.9 mm.; width 2.4 mm. New Mexico (Jemez Springs),—Woodgate.

seclusa n. sp.

Prothorax subparallel, widest at about the middle, the sides very evenly and strongly rounded throughout; under surface black throughout, except the inflexed sides of the prothorax (♂), or excepting the entire prosternum before the coxæ (♀).....3

3—Elytral punctures very dense and rather fine posteriorly, moderately coarse and separated anteriorly, the pronotal punctures moderate or rather small, sparse; color deep black, shining throughout, the prothorax red above and beneath, with only the coxæ, sternal process and margins of the acetabula black; antennæ (♂) as long as the body, nearly as in the preceding, very slender, or (♀) nearly three-fourths as long as the body; prothorax more than two-fifths wider than long, the apex much narrower than the base; surface even; elytra a little less than two and one-half times as long as wide, the humeri rather prominent; black area of prosternum (♂) opaque and strongly punctate, red and nearly smooth (♀). Length (♂, ♀) 11.0–12.0 mm.; width 3.0–3.2 mm. Montana to Texas; [*sanguinicornis* Germ.].....**ignicollis** Say

Elytral punctures everywhere notably coarse, still larger basally; coloration as in *ignicollis*, the under surface more piceous in the type; body much smaller; antennæ (♀) dark piceo-rufous, slender, about two-thirds as long as the body, nearly as in *ignicollis* but a little shorter, the third joint barely more than three times as long as wide, the tenth but very little longer than wide; prothorax nearly as in *ignicollis* but less narrowed apically and with much coarser and less numerous punctures, the erect hairs sparser; scutellum triangular, wider than long, not very acute; elytra similar but shorter, only slightly more than twice as long as wide; basal joint of the hind tarsi a little shorter, not quite as long as the remainder. Length (♀) 8.0 mm.; width 2.2 mm. New Mexico (locality unrecorded).

punctipennis n. sp.

4—Colors and sexual characters as in *ignicollis*, except that the black and strongly punctate area of the male prosternum extends further upward anteriorly, so as to appear slightly on the upper surface at the anterior angles; antennæ (♂) similar, though a little shorter and stouter throughout; prothorax nearly similar, being slightly more transverse and rather more narrowed anteriorly, with the punctures coarser and more numerous, the erect hairs paler; elytra less parallel, slightly narrowed from base to apex, more elongate, less evidently wider than the prothorax; legs longer, the hind femora extending well beyond the elytra. Length (♂, ♀) 12.0–13.0 mm.; width 3.2–3.9 mm. New Mexico (Jemez Springs)...**acomana** n. sp.

Colors and other general characters as in the preceding but shorter and with the elytra parallel, not subcuneiform; antennæ (♀) still shorter than in *acomana*, but little more than half as long as the body; prothorax similar but still more narrowed at apex, with still coarser punctures and less numerous erect hairs, the apex scarcely more than two-thirds as wide as the base; elytra more evidently wider than the prothorax and distinctly shorter, only a little more than twice as long as wide, perfectly parallel, very broadly rounded at apex; legs similarly much longer than in *ignicollis*, the hind femora extending

beyond the elytra even in the female. Length (♀) 12.0 mm.; width 3.7 mm. Utah (Southwestern),—Weidt.... *oblonga* n. sp.

Dr. G. H. Horn published (Tr. Am. Ent. Soc., VII, p. 41) a few remarks concerning the synonymy of *Batyle* in its comprehensive scope, but they are apparently based upon a very hasty and superficial survey. This is indicated at least by the assignment of *Eriphus coccineicollis* Hald., as a synonym of *ignicollis*; it is in no way related to *Batyle* but is a synonym of *Phymatodes amœnus* Say. The synonymy given under *Batyle suturalis* is erroneous, except in the case of *miniatum* Germ., and therefore cannot be adopted.

Batyleoma n. gen.

The species of this genus have a different facies from those of *Batyle*, due to their peculiar scheme of ornamentation, sculpture and vestiture; they are moderately numerous. The type is the *Callidium suturale* of Say (*miniatum* Germ.), rather abundant from Pennsylvania westward and southward to Iowa and Mississippi. In a large series at hand there is only one example having the black sutural vitta described by Say, the upper surface being red throughout normally. From the upper Missouri Valley to Colorado occurs another form, allied to *suturalis* but somewhat larger on the average, more elongate, rather more convex and invariably having a deep black sutural vitta beginning at about basal fourth or fifth and often greatly expanded at apex to the margins, sometimes in nearly apical half of the elytra; this was described under the name *Eriphus pearsalli* by Bland (Pr. Ent. Soc. Phila., 1862, p. 6) and is a perfectly valid species, as shown by the large series before me from Colorado, kindly communicated by Mr. Frost. *Rutilans* Lec., (Journ. Acad. Phila., ser. 2, II, p. 18) from Santa Fé, New Mexico, might at first glance be thought to be the same as *pearsalli*, but we infer from the description that the elytra are black only behind the middle. This never occurs in *pearsalli*, for the vitta in that species is never abbreviated anteriorly; it is virtually certain therefore that *rutilans* Lec., is also a distinct species.

Ruber Lec., (*Eriphus*?,—Pr. Acad. Phila., 1858, p. 82) and *cylindrella* Csy., (*Batyle*,—Ann. N. Y. Acad. Sci., VII, p. 587) are more elongate and cylindrical species, with longer legs and form a feebly demarcated separate group of the genus, in which the elytra appar-

ently never have a trace of black sutural ornamentation; the latter species is isolated because of the pallid vestiture, this being invariably black or infusate in all the others.

The following is allied to *suturalis* but is stouter in form:

Batyleoma fontinalis n. sp.—Form nearly as in *suturalis* but a little stouter, similarly punctate and with erect black hairs, except that the elytral punctures gradually become sensibly closer as well as smaller apically; color pale yellowish-red throughout above, only the scutellum black, the sutural beading of the elytra infusate; antennæ wholly black; under surface red, all the sterna of the hind body and the anterior coxæ and contiguous surface of the prosternum black; femora red, blackish at tip, the posterior almost in apical half; tibiæ wholly black on the posterior to red tipped with blackish on the anterior; tarsi black, piceous distally. Length (♀) 8.0 mm.; width 2.4 mm. New Mexico (Las Vegas).

The steep front before the line of the antennæ is even more sharply and deeply, transversely concave than in *suturalis*.

The prosternal sexual characters of the male are not quite so pronounced as in *Batyle* and do not involve a difference of coloration; in some forms such as *suturalis*, the male prosternum has an indefinite ante-coxal area more coarsely but not very densely punctate; in *cylindrella* this area becomes larger, more sharply limited and more densely sculptured.

Stenobatyle n. gen.

Body very elongate, generally black, with red prothorax; head small, the front concavely declivous; eyes moderately separated; antennæ very slender, approximately equal in length to the body (♂), the third joint very much longer than the fourth; prothorax variable in sculpture, without erect hairs; scutellum subequilateral but very acute at apex; elytra a little wider than the prothorax, strongly punctured, the ridge at about inner third; anterior coxæ separated; mesosternum slightly swollen, convex, declivous anteriorly, more prominent than the metasternum; legs long and slender; hind tarsi very long.

It will be noted that these characters agree tolerably well with *Entomosterna*, as limited above, but the antennæ differ in the relatively short fourth joint and the elytral ridge is not ivory-like. The two species known to me may be thus described:

***Stenobatyle prolixa** Bates—Deep black, subalutaceous, the prothorax

red, opaque; vestiture above very short, sparse and inconspicuous; head finely, closely punctate; antennæ (σ^7) distinctly longer than the body, the basal joint obconic, the third nearly one-half longer than the fourth, five to ten subequal in length to the third, the eleventh longer than the tenth, with a feebly marked elongate appendage; prothorax apparently a little longer than wide, widest and slightly inflated near basal third, thence strongly narrowed with less arcuate sides to the apex, which is less than three-fifths the maximum width; basal angles much everted, slender and very acute; surface velvety, minutely, sparsely and obscurely punctulate, the median line gradually elevated and prominent from slightly before to well behind the middle; elytra a little wider than the prothorax, three times as long as wide, the sides feebly converging from the base, the apices rectilinearly truncate, with the external angle prominent and subspiniiform; surface strongly, rather closely punctate, sparsely near the suture basally, the ridge low and feeble, impunctate, the surface linearly subprominent also more externally; sides of the body beneath minutely, densely punctate and silvery-pubescent, more coarsely, very sparsely so and glabrous medially; abdominal segments two to four gradually slightly shorter, the first and fifth longer. Length (σ^7) 15.7 mm.; width 3.8 mm. Mexico (Guerrero),—Baron. [*Entomosterna prolixa* Bates,—Tr. Ent. Soc. Lond., 1892, p. 180].

Distinguishable from the next by the feebler sculpture and costulation, larger size and immaculate prothorax; the red color of the prothorax extends entirely across the prosternum before the coxæ.

**Stenobatyle cribrata* n. sp.—Much smaller, more parallel and shining, subsimilar in coloration and vestiture, except that the red prothorax has a parallel black vitta from near the apex to the black basal margin, and that the red does not extend at all to the under surface; head very small, densely, rugosely sculptured; antennæ (σ^7) but slightly longer than the body, the third joint nearly twice as long as the fourth, five to ten equal but evidently shorter than the third, eleventh but slightly longer than the tenth, not evidently appendiculate; prothorax slightly elongate, not inflated, the sides very feebly converging, evenly and moderately arcuate from base to apex, the latter scarcely three-fifths the maximum width; basal angles but slightly produced obliquely though very acute; surface even, not tumid medially, coarsely, densely punctate, the punctures transversely confluent laterally; scutellum much smaller, less acute; elytra barely at all wider than the prothorax, a little shorter, more depressed, more coarsely, very densely punctate throughout, the ridge strongly and sharply elevated, smooth, the surface just exterior to the ridge feebly concave; lateral apical angles obtuse but distinct, not in the least dentiform; under surface and legs nearly similar, except that the dense punctures toward the sides of the body are less fine and the pubescence less evident. Length (σ^7) 10.5 mm.; width 2.4 mm. Mexico (Guerrero),—Baron.

Differs from *prolixa* as above noted and also in the less produced basal thoracic angles, smaller scutellum, still shorter fourth antennal joint and coarser sculpture of the under surface.

Ischnocnemis Thoms., is not represented in my cabinet; it has for its type a rather large Mexican species, *tripunctata* Thoms. (*costipennis* Dej., MS.); it is black, obscure above, the abdomen tawny-testaceous, the elytra densely punctate and having, between the two costæ, a broad brown vitta not attaining the apex. The genus *Ischnocnemis* was evidently misunderstood by LeConte and Horn (Class., p. 301), as the mesosternum is said to be protuberant; this error was noticed also by Bates.

Entomosterna Chev.

As limited above to those species agreeing in general with the formula of Lacordaire, but having only one vitta, pale, or apparently sometimes as in *cyaneus* Bates, not pale, on each elytron, this genus will comprise among others *Ischnocnemis cærulescens* Bates, as well as the following:

***Entomosterna unicastata** n. sp.—Deep black throughout, opaculate, the vestiture above very short and indistinct, silvery white and dense toward the sides of the body beneath; head and pronotum opaque, not very coarsely but extremely densely punctate throughout, the latter with a short smooth and narrow, slightly elevated median line behind the middle; antennæ (♂) a little longer than the body, slender, slightly compressed and subserrate distally, the third joint two-fifths longer than the fourth; prothorax fully as long as wide, slightly wider behind the middle than at base but with the sides very evenly and moderately arcuate, more converging anteriorly, the apex two-thirds the maximum width; basal angles, formed by the cariniform prolongation of the basal bead, lapping the elytral humeri; scutellum triangular, as wide as long, sometimes concave, acute at apex but not prolonged; elytra cuneiform, slightly wider than the prothorax, two and one-half times as long as wide, strongly, very densely punctate, even, excepting the large polished and very strong ivory costa at inner third; apices sinuato-truncate, the external angle acute but not spiniform. Length (♂) 11.7–12.7 mm.; width 2.8–3.4 mm. Mexico (Guerrero),—Baron.

To be distinguished very readily from *cærulescens* by the dull black surface, very strong elytral costa and other characters. The abdomen and sterna conform to *Stenobatyle* as described above.

The genera of the following group differ very much from the preceding—though often closely resembling certain of them in the ivory elytral vittæ—in the horizontal, sharply limited and anteriorly perpendicular mesosternum and shorter hind tarsi. *Plionoma* has much the same position in the group that *Batyle* and other genera with evenly convex elytra have in the preceding group:

- Elytra without costæ. 2
 Elytra each with two pale costæ. 3
 2—Antennæ very stout basally (♂) or throughout (♀), abruptly slender and strongly carinate beginning with the sixth joint in the former sex, much compressed, more pubescent and simple in the latter; elytra each with a discal densely pubescent vitta; body large. [Type *S. trilineatus* Dup.]. Mexico. ***Sphænothecus**
 Antennæ very slender throughout, filiform and non-carinate (♂), or shorter and but little stouter (♀); prothorax subconical, inflated well behind the middle; elytra wholly devoid of pubescent discal vitta, the apices bisinuato-truncate, the external angle sharply spiniform; body much smaller. [Type *Sphænothecus suturalis* Lec.]. Sonoran. **Plionoma**
 3—Prothorax and antennæ is in *Plionoma*; hind body more cuneiform; scutellum not regularly elongate-triangular and densely pubescent as in that genus, but sinuate at the sides or acutely produced at tip and nearly nude. [Type *Sphænothecus bivittatus* Dup.]. Texas. **Taranomis**
 Prothorax and antennæ nearly as in *Plionoma*, the former inflated less posteriorly, narrowed apically and with long erect flying hairs; elytra broadly arcuate and unmodified at apex; mesosternum less acutely transverse at the summit of the declivity; scutellum densely pubescent, very acute; body beneath and legs with long flying hairs. [Type *P. vittatus* Lec.]. Southern California. **Perarthrus**
 Prothorax not conoidal but parallel, broadly angulate medially or sometimes tuberculate at the sides. 4
 4—Antennæ as in the preceding, very slender, non-carinate in the male; scutellum acicularly produced at tip, nearly nude; elytral apices bisinuously truncate, generally feebly bispinulose; second ventral segment longer than the third; prothorax simply obtusely angulate at the sides, without erect hairs. [Type *Sphænothecus cyanicollis* Dup.]. Mexico. ***Lophalia**
 Antennæ gradually very stout basally, hirsute with short erect black vestiture; scutellum nearly similar, not densely pubescent; prothorax acutely tuberculate at the middle laterally, hirsute with erect black pubescence; elytra similarly subcuneiform, with the apices similar; second and fourth ventrals subequal and just visibly longer than the third; lateral carina of the elytra not attaining the humeri. [Type *Z. spissicornis* n. sp.]. Ecuador. ***Zalophia**

The last of these might seem to be allied to *Eriphus*, because of the thoracic tubercles, but the prothorax is transverse, the elytral tips bisinuously truncate, the legs short, with the femora all slender, the posterior coming very far from attaining the elytral apices and the hind tarsi are short and rather thick, with the first joint barely as long as the next two.

Sphænothecus Dup., seems to be properly represented only by *tomentosus* and *trilineatus* of Dupont; *bivittatus*, included by Lacor-

daire, should be excluded and is made the type of the genus *Taranomis* as stated above.

Plionoma n. gen.

Besides *suturalis* Lec. (*Sphenothecus*) and *S. rubens* Csy., the latter being a distinct species and not a variety of *suturalis*, we have another definable as follows:

Plionoma degener n. sp.—Smaller and narrower than *rubens*, shining, piceous-black, the prothorax bright red; under surface deep black, the prosternum transversely rufescent; femora red, the tibiæ and tarsi throughout black or nearly so; pubescence pale, short and sparse above, dense beneath except medially, sparse on the prosternum; head small; antennæ (♀) black, about as long as the body, the third joint fully a fourth longer than fourth to seventh, which are subequal, seven to ten gradually decreasing, the last much shorter than the tenth; prothorax nearly as in *rubens* in form and sculpture but, like the head, much less pubescent; scutellum much narrower, twice as long as wide; elytra nearly similar, coarsely, sparsely punctate, the punctures similarly smaller and closer in a broad sublateral line but scarcely intermixed with smaller punctures, the pale sutural line similar; under surface nearly similar but much less pubescent. Length (♀) 10.5 mm.; width 3.0 mm. Arizona (southeastern),—Dunn.

Allied to *rubens* but differing in its smaller size, sparser pubescence, especially on the head and prothorax above and beneath, in its dark coloration, narrow scutellum and especially in having the hind tibiæ almost unmodified; in *rubens* they are slightly incurvate and much more notably thickened apically than in *degener*. The hind femora are more evidently bispinulose at tip than in either of the other species.

Taranomis n. gen.

The type, named above, is the only species of this genus known to me. The conoidal bivittate prothorax is nearly as in *Sphenothecus*, but the elytra are wholly different in structure. It seems to be a local development and confined to Texas and adjoining regions. Besides *bivittata* Dup., this genus may possibly include the *Ischnocnemis pallida* of Schaeffer, from Lower California, but the probabilities are that it is not strictly congeneric.

Perarthrus Lec., is represented also by a single species, likewise a local development and confined to the seacoast regions of southern California. My single representative is much smaller than the single original male type, being only 8.2 mm. in length; it is a fe-

male, deep black throughout, except the ivory vittæ, and very coarsely, closely cribrate above, more coarsely on the pronotum than on the elytra.

Lophalia n. gen.

In the typical forms, represented in my collection at present by a pair of *Sphenothecus quadrivittatus* Bates, closely allied to *cyanicollis*, the male is larger and has longer, more cuneiform elytra than the female. In the following species this sexual difference is still more accentuated:

***Lophalia cribricollis** Bates—Male elongate, deep black throughout, except the ivory vittæ, which expand slightly beyond the carina, especially at base; pubescence everywhere extremely short and sparse, rather close toward the sides of the abdomen and on the met-episterna but not conspicuously; head densely punctate, the cleft between the broad antennal tubercles abrupt and deep; antennæ one-half longer than the body, the third joint but little longer than four to ten, which are equal, the eleventh sensibly longer, feebly appendiculate; prothorax fully a fourth wider than long, the truncate apex but little narrower than the base, the sides very obtusely subprominent just behind the middle; surface very broadly flattened medially, becoming slightly concave basally, not coarsely, deeply, very densely punctate, the median line slightly impunctate anteriorly; elytra at base distinctly wider than the prothorax, cuneiform, nearly three times as long as wide, rather coarsely, very deeply and closely punctate but not densely, the line between the two vittæ somewhat swollen and impunctate along the middle; fifth ventral truncate, but little longer than the fourth; prosternum densely punctate; legs rather short, the hind femora far from attaining the elytral tips. Length 16.5 mm.; width 4.2 mm. Mexico (Guerrero),—Baron. (*Sphenothecus cribricollis* Bates,—Tr. Ent. Soc. Lond., 1892, p. 179).

The specimen that I assume to be a female of *cribricollis*, is very much smaller, 11.5 mm. in length, parallel, with smaller head, slightly shorter elytra and antennæ about as long as the body, with the third joint much longer than the fourth, the latter shorter than five to eleven, which are of equal length; the coloration and sculpture are exactly similar throughout.

Zalophia n. gen.

This genus is evidently allied to the preceding, but the sides of the prothorax, instead of being broadly angulate or feebly tumescent submedially, have a small but abrupt median tubercle; besides this, the dense erect bristling pubescence of the prothorax and antennæ, the latter being gradually much thickened toward base, serves to

distinguish the two very readily. The type may be outlined as follows:

***Zalophia spissicornis** n. sp.—Rather stout, moderately convex, deep black throughout, excepting the entire inner costa and the narrower outer costa to a little before the middle, scarcely at all shining, the pubescence above everywhere close, long on the prothorax above and beneath, very short on the elytra, deep black throughout; on the under surface of the hind body it is sparse, the latter polished, the punctures becoming fine and dense only at the extreme sides; head very densely, finely sculptured, with a fine tumescent smooth line at base only; antennæ (♂) about a fourth longer than the body, feebly tapering and flattened distally, the third joint nearly a fourth longer than the fourth, which is a little shorter than the equal five to nine, tenth very little shorter but rather abruptly narrower, the eleventh but little longer, the appendage short and scarcely traceable; prothorax two-fifths wider than long, the truncate apex but little narrower than the base, minutely, deeply constricted at the margin; sides broadly subangulate to the tubercle, the surface rather finely, extremely densely punctate, with a very fine and tumescent but not impunctate median line in more than apical half, circularly concave at the middle basally; scutellum very acute, much longer than wide, punctate, but not densely pubescent; elytra cuneiform, at base much wider than the prothorax, two and one-half times as long as wide, rather finely, very densely punctate, the inner ridge notably large, smooth and strong; fifth ventral sinuate medially at apex. Length 14.5 mm.; width 4.2 mm. Ecuador (Babahoyo—at foot of Andes).

Recognizable by the dull and intensely black integuments, bristling black pubescence, very large and entire inner elytral ridge and other characters as related above.

Crossidius Lec.

This genus is a very large one and the species are generally well differentiated. Numerous forms still unpublished exist in all the larger collections; the following comprise about all the non-descripts that are before me at present:

Crossidius plagiatus n. sp.—General form and coloration as in *punctatus* but a little larger and stouter, the two fine impunctate lines disappearing apically on each elytron more evident; antennæ (♂) more distinctly longer than the body, otherwise nearly similar; prothorax much less transverse and not so densely or conspicuously pubescent; elytra nearly similar in form and sculpture but with the black sutural marking different, not elongate-fusiform and narrowed before and behind as in *punctatus* (♂), but parallel and straight at the sides, obtusely, angularly produced along the suture anteriorly, rounded behind, the suture narrowly black to the apices; abdomen much less densely punctate and pubescent, the segments black, finely pale at their apices, the last two

entirely pale. Length (σ^7) 16.5 mm.; width 5.3 mm. Unlabeled in the Levette collection.

Very different from *punctatus* in the sparser pubescence of the prothorax and under surface, longer and rather heavier antennæ, less transverse prothorax and different form of the elytral black marking. The female is more heavily marked with black and with the black elytral patch more angulate anteriorly than the male in this part of the genus, though apparently not so in the *pulchellus* or *discoideus* sections.

The following species is allied to *testaceus* Lec., differing in its much finer sculpture:

Crossidius maculicollis n. sp.—Oblong-elongate, moderately convex, scarcely shining and densely clothed with short stiff flavescient hairs, more erect, longer and bristling anteriorly, pale testaceous in color, the head black, the pronotum with four large blackish cloud-like spots involving the convexities, the elytra wholly immaculate; under surface infusate and with longer dense coarse pubescence; antennæ (σ^7) blackish, piceous distally, slender, about as long as the body, or (♀) much stouter, blacker and barely extending behind the middle of the body; prothorax coarsely, densely and clearly punctate, less coarsely and more irregularly in the male, the sides feebly tuberculate behind the middle, more strongly in the male; elytra slightly wider than the prothorax and two and one-half times as long as wide, subparallel, the apices evenly rounded to the obtuse sutural angles; surface with rather small but very deep and dense punctures, becoming larger and separated near the base, the discal thread-like lines very feeble. Length (σ^7 , ♀) 12.8–15.0 mm., width 4.0–4.8 mm. California (Los Angeles Co.).

Differs from *testaceus*, not only in the very much less coarse and extremely dense elytral sculpture, but in the subobsolete discal raised threads, which are very strong in the latter; it also differs in its shorter and darker male antennæ and in the distinctly demarcated four black thoracic spots. *Testaceus* is from San Diego.

The two following species are allied to *crassipes*, and in the same way, have the second joint of the middle tarsi distinctly wider than long:

Crossidius wickhami n. sp.—Form and coloration nearly as in *crassipes* but a little shorter; head and prothorax deep black; antennæ (σ^7) slightly longer than the body, of the usual structure; prothorax nearly three-fifths wider than long, coarsely, densely punctured and with bristling, rather abundant but not dense erect pale hairs, and an acute lateral tubercle well behind the middle; elytra but slightly more than twice as long as wide, the black sutural area narrow, fusoid, scarcely extending in front of the middle, the punctures everywhere rather fine and extremely

dense, less fine basally than apically, the apices broadly, evenly rounded; two fine lines on each unusually distinct to the apical declivity; abdomen black, gradually rufous behind, finely, very densely punctured and with long dense pale hairs. Length (σ^7) 13.0 mm.; width 4.4 mm. Utah (Marysvale),—Wickham.

Distinguishable by the very dense elytral sculpture, denser and much less coarse than in any other species. It is dedicated to Prof. H. F. Wickham in recognition of many interesting discoveries.

Crossidius truncatellus n. sp.—Still shorter in form than the preceding, similar in coloration, the pale vestiture less dense; antennæ (σ^7) longer and more slender, almost a third longer than the body; prothorax less transverse, barely one-half wider than long, the sides parallel and evenly rounded, not evidently tuberculate, coarsely but not so densely punctate, the punctures nearly isolated; elytra not quite twice as long as wide, dehiscent at apex, the apices rectilinearly truncate, the outer angle obtuse; punctures irregular, everywhere dense and differing but little antero-posteriorly but coarser than in *wickhami* throughout, the black sutural area similar but more extended; abdomen bright red, black only at the extreme base. Length (σ^7) 11.5 mm.; width 4.0 mm. Utah (Marysvale),—Wickham.

Differs from *wickhami* in its shorter form, less transverse and non-tuberculate prothorax, longer and more slender antennæ, truncate elytral apices and redder abdomen.

Allied to *pulchellus* Lec., there are many forms differing in special characters, but the general mutual resemblance is so striking that I will designate them all subspecies of *pulchellus* for the present; their peculiarities can best be compared in the form of a table as follows:

Body parallel, black, the abdomen rufous at apex, the elytra tawny yellow, black at the basal margin, the black area posteriorly extended slightly at the humeri, also with a large common parallel-sided black area, not extending to the sides, broadly involving the apices, extending to basal third, where it is abruptly and angularly contracted, the median part extending anteriorly along the suture for a short distance in an acute triangle; thoracic punctures very coarse, not crowded, having moderate cinereous hairs; antennæ a little longer than the body (σ^7) or three-fourths as long as the latter (♀); female smaller than the male but similarly maculate.

pulchellus Lec.

A—Similar in form and size to *pulchellus* and similarly maculate, except that the anteriorly projecting angle of the black area extends narrowly along the suture to the base and that the posterior part retreats slightly from the lateral edge to the apex, this oblique part deeply sinuate; it also differs in having the median line of the pronotum tumid and impunctate for a short distance behind

the middle. Length (σ^7) 11.0 mm.; width 3.0 mm. Without indication of locality in the Levette collection. . *sinuosus* n. subsp.

- B—Similar to the preceding but broader, without trace of the tumid median thoracic spot, the black area of the elytra similar, except that the abrupt angular contraction begins only a little before the middle of the length, the acute angular prolongation extending only to basal fourth. Length (σ^7) 11.3 mm.; width 3.4 mm. Kansas. *retractus* n. subsp.

- C—Nearly similar in form but with shorter elytra, these being scarcely more than twice as long as wide, the prothorax as in *pulchellus* and the two preceding, except that the hairs, as also those of the head, are longer, coarser and of a fulvous color; antennæ and black area of the elytra as in typical *pulchellus*. Length (σ^7) 10.8 mm.; width 3.2 mm. New Mexico (Las Vegas).

vegasensis n. subsp.

My two representatives of *pulchellus*, described above, are from Kansas and New Mexico and may not be exactly the same as the Bitter Root Valley, Montana, types of LeConte; they however fill the short description exactly.

The two following, while allied to *pulchellus*, are certainly distinct specifically:

Crossidius debilis n. sp.—Similar to *pulchellus* throughout in coloration and marking and in the thoracic vestiture, but more slender, the antennæ very slender and not longer than the body, the prothorax less transverse, more globular, but little wider than long and with the acicular lateral extensions of the basal margin much longer and more conspicuous, extending as far laterally as does the arcuate median part. Length (σ^7) 9.0 mm.; width 2.6 mm. Kansas.

The very slender and shorter antennæ, similar in structure but with all the joints shorter, the less transverse prothorax, with very prominent extensions of the basal margin and the more slender form of the body, will serve to distinguish this species from *pulchellus*.

Crossidius lanaticollis n. sp.—Coloration of the body and vestiture as in *pulchellus*, except that the form is more slender, the antennæ (♀) longer, only a fifth shorter than the body, the prothorax similar in form but with the punctures less coarse and much denser, the hairs very much longer, dense and very conspicuous, concealing the sculpture; elytra with the base more extensively black, the discal spot similarly parallel but more extended, separated from the basal black area by a narrow transverse sinuous line, its anterior prolongation not angular on the suture but bilobed at tip, its posterior margin retreating from the elytral edge, then abruptly parallel with the suture to the apex, which is less broadly involved than in *pulchellus*. Length (♀) 10.0 mm.; width 2.8 mm. Unlabeled in the Levette collection.

There are a number of characters distinguishing this species from *pulchellus*, of which the pronotal sculpture and vestiture and form of the elytral maculation are the most important.

The forms allied to *discoideus* Say, differ from the preceding in having the prothorax and elytra bright scarlet in color, instead of tawny-yellow, and in having the large elytral black area, which is somewhat similar in form, more extended, always prolonged along the suture to the black base and in being more expanded behind to the actual edge of the elytra. *Discoideus* Say, from the Mississippi territory, has no black maculation on the prothorax; it was described subsequently by Bland under the name *pulchrrior*, and *blandi* Csy., is an allied though smaller and much more slender species from Utah. The following is frequently misidentified as *discoideus*:

Crossidius sayi n. sp.—Elongate, subparallel, moderately convex; head black; antennæ evidently longer than the body (σ^7) or very much shorter (♀), nearly as in *pulchellus*, except that the last joint is not so elongate and is more obtuse at tip; prothorax one-half wider than long, subparallel and rounded at the sides, bright red, with two large black spots before the middle, which are generally prolonged obliquely forward, uniting with the black apical margin near the middle point, the basal margin also black; punctures narrowly separated, coarse (♀) or somewhat small but deeper (σ^7), the erect pale hairs fine, not obscuring the surface; scutellum triangular, acute, densely and pallidly pubescent; elytra distinctly wider than the prothorax, obtusely rounded at tip, slightly longer in the male, parallel, coarsely, deeply and closely punctate, much less coarsely but still strongly toward apex; legs black, the abdomen and prosternum red, the latter blackish basally in the male. Length ($\sigma^7, \text{♀}$) 10.5–11.2 mm.; width 2.9–3.1 mm. New Mexico.

Differs from *discoideus* in the maculation of the prothorax. The following is much larger but may be considered a subspecies of *sayi* for the present:

Crossidius bilenticulatus n. subsp.—Stouter in form, similar in coloration and in maculation, except that the two ante-median black spots of the pronotum are less anterior and isolated, though obliquely oval, and the punctures less coarse but deeper; antennæ (♀) barely two-thirds as long as the body, much stouter and more flattened and serrulate distally than in the preceding; abdomen and prosternum bright red throughout. Length (♀) 14.0 mm.; width 4.2 mm. New Mexico.

The elytral humeri are more rounded and the elytral punctures still denser than in *sayi*, though there is great similarity elsewhere, except in size and in the antennæ.

Crossidius submetallicus n. sp.—More elongate and more convex than either of the preceding and with the elytra not parallel but feebly cuneiform, with the surface more declivous to the broadly rounded apices; surface more shining, the dark areas of the elytra with greenish-metallic lustre; vestiture pale, not dense, long on the head and prothorax, the former black; antennæ (♂) barely longer than the body, rather less slender than in *sayi* but otherwise nearly similar; prothorax slightly less transverse, the subparallel sides less rounded, red, with a large, posteriorly bifurcate apical black area, extending slightly behind the middle, the basal black margin anteriorly expanded along the middle, leaving a sinuous red band separating the black areas, the punctures strong and close, rather unequal in size; scutellar vestiture not so dense; elytra with the strong and deep punctures only moderately coarse and everywhere well separated; abdomen black, rufescent apically; prosternum deep black, except on the flanks. Length (♂) 12.7 mm.; width 3.5 mm. Colorado (Boulder Co.).

Differs from the two preceding in the less parallel form, subcuneate and submetallic elytra, which are less closely punctate and in the black prosternum of the male, this being largely red in *sayi* in both sexes.

Tylosis Lec.

The various modifications of this Sonoran genus resemble each other so closely in their general physiognomy, that thus far no one has attempted to define specific forms among them, excepting LeConte, who many years ago named two or three, which were subsequently suppressed by Dr. Horn. I find however, that this action was without warrant, for the species are as well defined by the male sexual characters as those of *Batyle*, and several other genera, where the coloration or general habitus varies from species to species within but very narrow limits, seeming thereby to indicate an absence of specific differences. The species are all bright red, rather shining, coarsely and closely punctate, more coarsely and loosely toward base and more finely and densely toward apex of the elytra, with the vestiture very short and sparse above but much denser and rather conspicuous beneath, and all here defined have the five black callous spots of the pronotum absolutely alike. The general scheme of elytral ornamentation is also of the same order throughout, but varies greatly in development from one sex or species to another, though not so greatly as has been assumed among individuals of the same sex of the same species. The male has the elytral spots much less developed than the female as a rule. I seem

to find some eleven species and subspecies among my material, omitting *sellata* Lec., which is unknown to me but certainly valid; it belongs to the *medialis*—*parva* section below, but is much larger than any one at present in my cabinet, all of that section here described being very much smaller than *maculata* and allied forms. The purely 12-jointed antennæ in both sexes very clearly isolates this genus among its allies.

Posterior spots of the elytra at a considerable distance from the apices, larger species. 2

Posterior maculation much closer to the elytral tips but never involving the latter; intermediate spots much less ante-median, in fact only very little before the middle; species much smaller in size. 6

2—Form very stout in the female, much the largest of the genus; coloration as usual, the head, antennæ, five pronotal callous spots, scutellum and humeral, post-scutellar, large quadrate ante-median and similarly large subapical spots on the elytra, deep black, the two latter broadly united in pairs across the suture, forming transverse blotches, and also united longitudinally by a narrow parallel sutural black line; under surface black, the prosternum wholly red, excepting the coxæ; legs black throughout; elytra parallel; prothorax strongly transverse, the sides parallel and but feebly arcuate, abruptly rounding at apex and base. Length (♀) 19.0 mm.; width 5.8 mm. Arizona (San Bernardino Ranch, Cochise Co.),—Snow.

robusta n. sp.

Form less stout, not so large in size. 3

3—Prothorax much wider than long [almost twice as wide as long—LeConte], the sides of the elytra slightly converging from the base even in the female, the ante-median spots of the elytra transverse, not oblique, the two subapical isolated. Length 14.5 mm.; width 4.3 mm. New Mexico. **maculata** Lec.

Prothorax never more than one-half wider than long, undulatingly rounded at the sides throughout, sometimes slightly prominent behind the middle, narrowed more or less anteriorly to the broadly truncate apex. 4

4—Male with the prosternum wholly black before the coxæ, the black extending slightly upon the lower part of the flanks; body more elongate than usual, the antennæ very long, fully two-thirds longer than the body, the fifth joint distinctly longer than the sixth, the latter 3.2 mm. in length; prothorax more elongate than in any other, barely a third wider than long, unusually narrowed toward apex; elytra long, strongly cuneiform, the basal spots small, the ante-median obliquely subquadrate, attaining the suture but not prolonged, the ante-apical small. Length (♂) 16.5 mm.; width 4.8 mm. New Mexico (locality, unrecorded). **argus** n. sp.

Male with the prosternum black but broadly and sharply red at apex. . 5

5—Male with the prothorax unusually large, very nearly as wide as the base of the elytra, one-half wider than long, but slightly narrower

apically, the black of the prosternum sharply limited at the sides, not extending to the flanks, the elytra long, very strongly cuneiform, the humeri unusually prominent, the two basal spots well developed, the ante-median small, slender, very oblique to the suture, the posterior wholly wanting; antennæ nearly as in *argus* but with the fifth and sixth joints equal, 3.8 mm. in length. Female much stouter and with perfectly parallel elytra, broadly and evenly rounded at apex, the prothorax much narrower than the elytra, the latter maculate as in the male, except that the larger oblique ante-median spots extend, very much narrowed, along the suture nearly to the apex, the posterior spot small and more lateral than usual, much nearer the side margin than the suture. Length (♂, ♀) 16.5 mm.; width 4.8–5.1 mm. New Mexico (Jemez Springs),—Woodgate.

sexualis n. sp.

Male with the prothorax similar but smaller, much narrower than the base of the elytra, the black of the prosternum similar and with a similar red nick at the middle anteriorly but with the lower part of the flanks also more indefinitely black and the intercoxal process not wholly black but red; elytra much less cuneiform and less elongate, two and one-half times as long as wide, the post-scutellar spot wholly wanting, the humeral minute, the ante-medial very small, transverse, isolated, the subapical very small but in the usual position, nearer the suture than the sides; antennæ very slender but not quite so long as in the two preceding, the fifth joint a little longer than the sixth, which is 3.2 mm. in length. Female slightly stouter, distinctly shorter, the elytra perfectly parallel, with the combined apices evenly rounded, the two subbasal spots very small, the ante-medial narrow, very oblique to the suture, extending finely along the latter to the subapical spots combined in transverse rhombus. Length (♂, ♀) 14.8–15.5 mm.; width 4.7 mm. Texas (El Paso),—Dunn.

texana n. sp.

6—Elytra in the female conjointly broadly arcuato-truncate at tip, the external angles obtusely rounded. Body parallel, moderately stout, colored as usual, the subbasal elytral spots small, the post-scutellar very minute, the submedian moderate, oblique but not quite attaining the suture, the posterior largest, rounded, broadly truncated at the suture, separated from the tip by one-half its length; prothorax less than one-half wider than long, much less rounded at the sides than usual; antennæ (♀) very slender, as long as the body, the last joint much shorter than the eleventh as usual in that sex; prosternum and the process wholly red, minutely, sparsely sculptured. Length (♀) 12.2 mm.; width 3.5 mm. New Mexico (Jemez Springs).

subtruncata n. sp.

Elytra in both sexes conjointly evenly rounded at apex.....7
7—Prothorax short, two-thirds wider than long, coarsely, deeply punctate, with a distinct median impunctate line from apex to the median callus; elytra parallel, slightly wider than the prothorax, the subbasal spots well developed, the submedian quadrate, slightly sinuate before and behind, not quite attaining the suture, the subapical moderate, posteriorly oblique but not involving the sutural bead;

- antennæ (♀) slightly longer than the body, the twelfth joint slender, finely pointed, barely a third as long as the third, three-fourths as long as the eleventh. Length (♀) 10.0 mm.; width 2.7 mm. New Mexico (locality unrecorded)..... **brevicollis** n. sp.
- Prothorax less abbreviated, never more than one-half wider than long. .8
- 8—Male with the well defined black area of the hypomera or inflexed flanks of the prothorax separated from the anterior margin by a sharply defined red band.....9
- Male with this equally well defined black area solid to the apical margin; entire prosternum as in the preceding, deep black.....10
- 9—Prothorax moderately coarsely, very closely punctate, the impunctate line variable but never well defined. Male with the antennæ very slender, two-thirds longer than the body, the joints decreasing very slightly in length, twelfth arcuate distally, very slender, distinctly longer than the eleventh; subbasal spots of the elytra well developed, the submedian transverse, sometimes slightly prolonged posteriorly on the suture, the subapical suboval, moderate, isolated or oblique to the suture. Female with the antennæ not less slender, a fourth longer than the body, the last joint two-thirds as long as the eleventh and very much more slender; subbasal elytral spots as in the male, the two more posterior also similar but much larger, broadly uniting on the suture and connected longitudinally by a black sutural line; longitudinal distance between the spots much greater than their own length. Length (♂ 2, ♀ 1) 11.5–12.2 mm.; width 2.8–3.3 mm. New Mexico (Jemez Springs)..... **medialis** n. sp.
- A—Prothorax as in the preceding. Male with the elytra much shorter and more parallel than in *medialis*, with the subbasal spots not quite so large, the submedian very large, oblong, obliquely attaining the suture very broadly but not prolonged, the subapical similarly large but rounded, broadly attaining the suture, the anterior outline of the combined spots sinuate suturally; antennæ still more slender, barely one-half longer than the body, the outer joints relatively much shorter and more rapidly decreasing, the last but very little longer than the eleventh; hind tibiæ unusually coarsely punctate. Length (♂, ♀) 9.5–12.0 mm.; width 2.6–3.0 mm. New Mexico (Jemez Springs)..... **bifasciata** n. subsp.
- 10—Prothorax similar. Male with the antennæ almost similar throughout, the subbasal spots of the elytra large, elongate-oval, the submedian very large, broadly attaining the suture, the subapical similarly very large, the combined spots forming a large area which gradually narrows to the combined submedian blotch; abdomen finely, very closely punctate, the fifth ventral very broadly arcuate at apex as usual but longer than in the preceding, a third longer than the fourth; hind tibiæ much more finely punctate. Length (♂) 10.0 mm.; width 2.7 mm. New Mexico (Jemez Springs).
- conjuncta** n. sp.
- A—Prothorax more coarsely punctate and a little more abbreviated, similarly well rounded at the sides. Male elytra with the inner of the subbasal spots much smaller than the outer, the very large blotches formed by the confluent submedian and subapical spots

uniting longitudinally by an angular extension of the anterior of the two and not the posterior, the longitudinal distance between the blotches, as in *conjuncta*, very much shorter than the length of the blotches and a little less than the distance separating the large transverse blotches in *bifasciata*, though even there it is less than the length of the blotches and very different from the condition in *medialis*; antennæ very slender, one-half longer than the body, nearly as in the preceding but with still shorter three penultimate joints; abdomen finely but notably less closely punctate, the fifth segment nearly similar but much less broadly rounded. Length (♂) 8.5 mm.; width 2.0 mm. New Mexico (Jemez Springs).....*parva* n. subsp.

It will be noted that seven of the above described forms, counting the eight assumed representatives of *maculata*, are from a single locality in New Mexico, which, in conjunction with the supposed unusual variability of the species, might be held to render somewhat injudicious or premature the definition of specific forms on the lines above suggested; but in regard to this it can be said at least, that structural and sexual characters have figured prominently or even primarily in coming to this conclusion. There are many marked structural differences throughout the series; for example, the prothorax in *robusta* is parallel and nearly straight at the sides, rapidly rounding at apex and base, giving that species a very different facies from the others, irrespective of size and ornamentation. *Argus* and *sexualis* are also well marked species in the form and proportion of the parts and in the male sexual characters. I am almost certain that *medialis* is different specifically from any one of the last three forms of the tables but place *bifasciata* as a subspecies for the present. The two primary divisions of the genus indicated above are founded upon structural differences of unequivocal weight, this being strikingly evident on mere casual observation. Mr. Bates describes certain prosternal peculiarities of coloration in differentiating the Mexican *puncticollis* and *angusticollis*, which relate obviously to the males alone, but does not state that the coloration noted is purely sexual; in the female the entire prosternal surface is always red and much less strongly sculptured than in the male, so far as noted. Both these species differ from any of our own in having the prothorax cylindrical and nearly as long as wide, with the entire elytral apex black. My two examples of *puncticollis* are from Guerrero and are males; it has been recently announced by

Mr. Schaeffer as occurring at Palmerlee, Arizona (Bull. Bk. Inst., I, p. 162) and with the usual great color variability, which, in the light of the above statements, is probably in large part sexual in origin.

Stenosphenus Hald.

An extensive genus in the warmer parts of North America and having rather mixed affinities; the spinose antennæ suggest some of the next tribe, and other features recall *Elaphidion*, but, on the whole, it is very isolated and without close allies. The two following species have not yet been described:

Stenosphenus lucanus n. sp.—Rather stout, less parallel than *dolosus* Horn, shining, deep black, the prothorax above and beneath bright red, the femora piceo-rufous, the anterior brighter than the others, the outer face of all the tibiæ with a fine strong entire carina, abbreviated apically only on the anterior; head strongly, densely punctate, with the usual fine raised median line; antennæ (♂) not quite one-half longer than the body, very slender, of the usual structure, the spines small and slender; prothorax widest rather behind the middle, not quite as long as wide, the sides evenly rounded, more converging anteriorly, the apex three-fourths as wide as the base, the basal constriction moderate; punctures rather small but perforate, sparse, very irregular in distribution; elytra wider than the prothorax, rather strongly narrowed from base to apex, not quite two and one-half times as long as wide, rather coarsely, strongly punctate, the punctures closer medially and externally on each elytron, sparse toward the suture, the apices obliquely truncate and strongly bispinose. Length (♂) 10.0 mm.; width 2.5 mm. Lower California.

Not closely allied to any other and differs from *rufipes* Bates in its less coarsely punctate pronotum, shorter antennæ and other features. The prosternum of the male has a depressed and very isolated, transversely oval and coarsely, densely punctate areola midway between each coxa and the anterior margin.

Stenosphenus pruddeni n. sp.—More elongate than *lucanus*, not parallel, shining, pale rufous, the elytra and abdomen piceous; head rufous, black basally, coarsely, closely punctate between the median line and the eyes; antennæ (♀) at least a fifth shorter than the body, joints three to seven spinose; prothorax as long as wide, the sides feebly converging and broadly, feebly arcuate between the distinct basal and apical constrictions, the punctures coarse and conspicuous, rather sparse but very uneven in size and distribution, with a broad impunctate median line; scutellum semicircular, densely pubescent; elytra much wider than the prothorax, but little narrowed from the base, two and two-thirds times as long as wide, transversely truncate and very minutely bidentate at apex, the punctures strong, only moderately sparse, closer on the flanks,

gradually slightly smaller from base to apex, the short hairs cinereous, distinct; legs rufous throughout, gradually more obscure distally; prosternum transversely rugulose, very finely, closely punctato-rugulose laterally. Length (♀) 10.0 mm.; width 2.3 mm. Arizona (Cañon of the Colorado),—T. Mitchell Prudden.

A distinctly isolated species, distinguishable by its coloration and strong punctures. The female prosternum in many species has a feeble inequality of sculpture, suggestive of that so strongly developed in the male.

Mr. Schaeffer is mistaken in stating (Journ. N. Y. Ent. Soc., 1911, p. 124) that *longicollis* Csy., is the same as *lepidus* Horn. Even were his remarks as to the great variability of the sternal sexual characters of the male, strictly an expression of the reality and not due in large part to confounding different species or subspecies, it can nevertheless be proved that *longicollis* is distinct from *lepidus*; for the prothorax is not only more elongate than in *lepidus* but it differs in color, being broadly clouded with piceous laterally, and the elytral punctures are more numerous and, not only not more distinct and closer apically, as stated by Dr. Horn of *lepidus*, but still smaller than basally and not at all less sparse. The antennæ also are much longer, being about three-fourths longer than the body in the male. But, as a matter of fact, the prosternal characters of the male are of much importance and, as shown by the material before me, do not vary intraspecifically in the manner stated by Mr. Schaeffer, although there is some variability as in nearly all secondary sexual structures. The difference between *longicollis* and *lepidus* in this respect is very great indeed.

Tribe CLYTINI

Clytus and numerous allied genera differ from the preceding tribe, not only in the general facies of the body, but in many special characters relating to form of the head, type of ornamentation, antennal structure and other features; the eyes are similarly always very finely faceted and are narrowly emarginate. Disregarding the group Anaglypti and the genus *Euryscelis*, which has 12-jointed antennæ, our generic groups of the tribe may be briefly defined in the following manner:

Basal process of the abdomen bluntly rounded or truncate at apex. 2
 Basal process acute. 7

- 2—Antennæ with joints three to six or seven truly spinose externally at apex.....3
 Antennal joints not spinose at apex, though sometimes very acutely angulate or subspinulose.....4
- 3—Prothorax not modified at base, evenly rounding at the sides to the basal constriction, the pronotum biimpressed; antennæ long; elytra intricately maculate with pubescent lines, many of which are longitudinal. [Type *Clytus hartwegi* White].....**Tylcus**
 Prothorax abruptly declivous laterally at base as in *Cyllene*, the pronotum differing in being solidly and densely clothed with short pubescence, never banded; antennæ long and notably heavy; elytra carinulate subsuturally, with irregular transverse bands and finer lines of pale pubescence, very acutely unispinose at tip; coxæ widely separated, the prosternal process flat, abruptly vertical behind, the mesosternum very steeply but convexly declivous; met-episterna broad; basal joint of the hind tarsi long, rather compressed. [Type *Clytus antennatus* White].....**Megacyllene**
- 4—Prosternum flat, broad between the coxæ, the posterior edge prominent, the posterior wall vertical or even concave; prothorax abruptly declivous at base laterally and with transversely pubescent bands; elytra carinate subsuturally, except basally, transversely fasciate or spotted with dense pale pubescence, the apices angulate or acute; coxæ widely separated, the mesosternum vertical or inclined; met-episterna and tarsi as in the preceding, the antennæ moderately long, much more slender. [Type *C. signifera* Newm.]....**Cyllene**
 Prosternum horizontal or nearly so but very narrow between the coxæ; mesosternum broadly, evenly sloping.....5
 Prosternum wider between the coxæ and gradually sloping posteriorly; mesosternum also gradually sloping.....6
- 5—Head transversely subprominent between the antennæ, thence sloping very steeply to the frontal margin, the antennæ slender throughout, cylindrical, moderately long, the third joint longer than the fourth and very nearly as long as the fifth; prothorax evenly rounded at the sides, more narrowed basally, the sides slightly sinuate at base; scutellum broad, rounded, well developed; elytra as in *Cyllene*, except that the subsutural carina is obsolete or barely traceable and the finer transverse lines of cinereous pubescence more irregular, with a short longitudinal bifid line near the suture at apex, which never appears in *Cyllene*; legs shorter than in that genus. [Type *C. fulminans* Fabr.].....**Arhopalus**
 Head nearly as in *Arhopalus* but more abbreviated in front of the antennæ, the latter shorter, more compact and slightly thickened distally; prothorax and scutellum similar, the former relatively less developed; elytra as in *Cyllene*, the carina similarly very distinct; mesosternum generally unmodified but sometimes with a subtuberculate median longitudinal carina; legs only moderate in length, slender, the basal joint of the hind tarsi not longer than the entire remainder; body very densely ochreo-pubescent, the elytra irregularly and transversely variegated. [Type *O. citrinus* Chev.]

*Ochræthes

6—Head as in *Ochræthes* but relatively smaller; antennæ rather short but very thick, rapidly tapering distally, the joints basally very broad, strongly flattened, obtriangular, with their apices deeply and sub-symmetrically emarginate and acutely bidentate, three to seven subequal, thence narrower and shorter, the eleventh somewhat appendiculate at tip; prothorax broadly oval, nearly as wide as the elytra, banded only at the sides; scutellum broad, well developed; elytra as in *Cyllene* but with the subsutural carina almost completely obsolete, the ochreous bands forming a peculiar design; legs only moderate in length but notably thick throughout, the basal joint of the hind tarsi barely at all compressed and not longer than the remainder. [Type *Clytus speciosus* Say].....**Glycobius**

Head as in *Glycobius* and likewise relatively small; antennæ rather short, moderately slender, equally thick throughout beyond the basal joint, cylindric, the joints not emarginate, the subequal third and fifth longer than the fourth; prothorax similarly large and transversely oval, strongly convex, not ornamented; scutellum similarly large, broad and rounded; elytra usually but little wider than the prothorax, tapering more or less slightly, the apices rounded or but little modified, the surface more convex, without trace of subsutural elevation, ornamented with sharply defined yellow design in the female, the maculation obsolete or barely traceable in the male; legs moderate in length, often notably thick, the basal joint of the hind tarsi longer than the remainder and strongly compressed; body similarly large in size. [Type *Clytus nobilis* Say].....**Calloides**

7—Basal joint of the hind tarsi longer than the remainder.....8

Basal joint much shorter, scarcely longer than the next two combined. .14

8—Front bicarinate; antennal fossæ margined above by a long acute cariniform line; eyes moderate, subtruncate or less rounded beneath; antennæ moderate to short, rather slender, filiform to slightly thickened distally, the third joint longer than the fourth or fifth; prothorax rounded at the sides, feebly subconstricted at base, evenly sculptured; scutellum well developed, broadly rounded; elytra not or but little wider than the prothorax, generally feebly tapering, obliquely truncate and sometimes unispinose at apex; anterior coxæ rather narrowly separated, the intermediate widely, with the meso-sternum gently sloping; legs rather slender, the posterior long, the femora stout (♂) to slender (♀); met-episterna wide. [Type *Clytus (Xylotrechus) sartorii* Chev.].....**Xylotrechus**

Front not bicarinate, the antennal fossæ not acutely margined above..9

9—Pronotum with short transverse carinules, disposed in one or more longitudinal lines or series; front more or less extended beneath the eyes, the genæ long; eyes moderate, subcircular, with the usual eccentric emargination; antennæ more or less short, slightly thickened and compact distally; prothorax rounded at the sides, bi-truncate, as wide as the elytra or very nearly; scutellum large, broadly rounded; elytra even in convexity, having three or four fine transverse lines of dense pale pubescence, variously disposed, the apices obliquely truncate, generally unispinose; anterior coxæ widely separated, the sterna sloping; met-episterna wide; legs

- moderate, the posterior very long, thicker in the male. [Type *C. luscus* Fabr.]..... **Neoclytus**
- Pronotum even as a rule, the sculpture fine, dense and evenly disposed throughout 10
- 10—Head and prothorax well developed, the latter generally but little narrower than the elytra; front gradually sloping, the inter-antennal space not or but very slightly prominent; anterior coxæ subcontiguous or very narrowly separated; mesosternum moderately broad, gently sloping; met-episterna sometimes a little narrower; prothorax evenly rounded at the sides, not or scarcely at all constricted at base; eyes subcircular, rounded behind 11
- Head and prothorax relatively less developed, the latter much narrower than the elytra; front abruptly vertical from the more prominent inter-antennal ridge, short; anterior coxæ subcontiguous; mesosternum not gently sloping but almost vertical; eyes more transverse, having the usual emargination but broadly subtruncate at base. . 13
- 11—Outline and general characters nearly as in *Neoclytus*, the elytra generally somewhat tapering but less modified at tip and not spinose as a rule, the legs similarly rather long, the hind femora extending greatly beyond the elytra, especially in the male, but with the middle femora more strongly claviform, the met-episterna not very evidently narrower, similarly parallel; elytral ornamentation generally in fewer irregular fasciæ. [Type *Leptura verbasci* Linn.]. **Clytanthus**
- Outline more parallel and cylindrical, the legs relatively less developed, more slender and differing less sexually, the elytra ornamented somewhat as in *Clytanthus* and *Xylotrechus*; front and genæ short. . . . 12
- 12—Prothorax longer than wide, equal at base and apex, the surface feebly bitumorse near the base, which is very briefly subtubulate; scutellum smaller than usual, scarcely wider than long; elytra parallel, rounded and feebly subtruncate at the apices; antennæ long, very slender, filiform; met-episterna exceptionally narrow; body small, slender, the upper surface less convex than usual. [Type *Clytus albofasciatus* Lap-Gory]..... **Clytoleptus**
- Prothorax wider than long, equal at base and apex, not at all constricted at base and not bitumorse; scutellum larger and broader; elytra but slightly modified at apex, generally very nearly parallel; antennæ short, incrassate and compact distally; met-episterna of the usual relative width; body larger, stouter, more convex above. [Type assumed *C. marginicollis* Lap-Gory]..... **Clytus**
- 13—Prothorax, antennæ, met-episterna and scutellum nearly as in *Clytus*, the first more constricted and subtubulate at base, the legs not differing much sexually, only moderate in length, the posterior not unusually developed; elytra ornamented with four or five narrow fasciæ. [Type *C. nimbata* n. sp.]..... ***Clytopsis**
- 14—Body somewhat as in *Clytopsis* but narrower and more convex, the eyes similarly rather transverse and broadly subtruncate at base, having an unusually large emargination; front very short, vertical; antennæ moderately long, somewhat tapering, flattened and very free-jointed distally; prothorax nearly as in *Ochraethes*, constricted and tubulate at base, coarsely sculptured; scutellum moderate;

elytra much wider than the prothorax; crossed by a median pale fascia, rounded or but very slightly modified at the apices; anterior coxæ moderately separated, the mesosternum gently sloping, the met-episterna of only moderate width; legs rather stout, moderate in length, the femora claviform, the posterior extending but little beyond the elytra even in the male, wholly unarmed at apex. [Type *Clytus lanifer* Lec.].....**Paraclytus**

TYLCUS (n. gen.) is proposed for the type above named, because of its spinose antennæ, general facies, type of ornamentation and other features, which render it very inharmonious with the normal forms of *Trichoxys* Chev., no form of which tropical genus seems to come so far to the northward as our Mexican boundary.

MEGACYLLENE (n. gen.) is also proposed for a single aberrant species, so far as yet discovered; *antennatus* White (= *eurystethus* Lec.) is strikingly distinct from the members of *Cyllene* proper in other ways besides the remarkably developed and strongly spinose antennæ, among which the different type of pronotal vestiture, less prominent and less anteriorly precipitous mesosternum and absence of the conspicuous triangular elevation between the antennæ are the most obvious.

Cyllene Newm.

One of the more sharply defined and isolated genera of the Clytini and well represented in the colder as well as the tropical regions of the new world. There are at least two rather distinct intrageneric groups, represented by *erythropus*, *crinicornis* and other tropical forms on the one hand and *robiniæ*, *chara* and other more heavily built species, inhabiting the north temperate regions; in the latter type the mesosternum is generally less prominent and less vertically inclined anteriorly as a rule, and the prothorax less arched at the sides and less angulate before the basal constriction; also having less slender antennæ; it is quite proper I think to regard these groups as subgenera. *Cyllene brevipennis* Lec., is also apparently of subgeneric value and the disposition of it as a synonym of *decora* Oliv., by Dr. Horn is manifestly incorrect. In the *erythropus* group, the three following are hitherto undescribed; they have the prothorax quadrifasciate and are therefore allied to *crinicornis* Chev.:

Cyllene reducta n. sp.—Form as in *crinicornis* but narrower, the elytral maculation of isolated spots also similar, except that the two pairs near the suture, before and behind apical fourth, are much more approximate longitudinally; interantennal elevation narrower and less posteriorly

flattened; antennæ nearly similar; prothorax less transverse though of similar form and ornamentation, the sides evenly arcuate and converging from the basal constriction to the apex; elytra similar but at base a little wider than the prothorax and not equal thereto as in *crinicornis*; legs more slender. Length (σ , φ) 11.6–12.5 mm.; width 3.4–3.6 mm. A single pair without designation of locality but probably from Texas.

Closely allied to *crinicornis*, with a pair assumed to be of that species, taken at Brownsville, Texas, it has been compared. It is notably narrower in form than *crinicornis*.

Cyllene filicornis n. sp.—Very small in size, slender, the ornamentation throughout as in *reducta*, the legs and antennæ similarly rufous; inter-antennal protuberance more feeble, more laterally expanded at the frontal margin; antennæ (σ) similarly about as long as the body but extremely slender and filiform, the joints similarly proportioned in length; prothorax differing conspicuously in form from either *reducta* or *crinicornis*, being parallel and straight at the sides to the middle, then gradually and more strongly rounding to the apex, much less transverse, being only about a third wider than long; elytra as in *reducta* but still more distinctly wider than the prothorax; legs slender, very much shorter. Length (σ) 8.4 mm.; width 2.5 mm. Texas.

Distinguishable readily from the preceding by its very small size, still more slender form, very much more slender and filiform antennæ, outline of the prothorax and other characters.

***Cyllene andesiana** n. sp.—Similar throughout to *crinicornis* in form and ornamentation but a little stouter, somewhat larger and with more transverse prothorax, the spots of dense pale pubescence better defined, denser and of deeper yellow color; antennæ (φ) similar, except that the third joint is a little longer than the fourth and not shorter than the fourth as in *crinicornis*; elytra with the black ground more finely and densely velvety. Length (φ) 15.0 mm.; width 4.8 mm. Ecuador (Babahoyo, at the foot of the Andes).

Distinguishable from *crinicornis* by the characters given above; the two sutural pairs of spots before and behind posterior fourth are more widely separated longitudinally than in *crinicornis*.

Of *erythropus* Chev., I have before me a pair, in excellent condition, from Guerrero; it is ornamented very nearly as in *crinicornis*, except that there are only three fine transverse pronotal belts of pale yellow and the pygidium is pallidly lineate along the middle; it is also notably larger in size.

The two following species come nearer to *Megacyllene antennata* than any others and are native to the same regions; in them the antennal joints are almost truly spinose, the outer angles being finely and acutely prolonged for a short distance, but in all the other

characters of the front, pronotal ornamentation and sterna they are properly *Cyllene* and not allies of *antennata*:

Cyllene snowi n. sp.—Rather stout and convex, black, testaceous under the fasciæ of the elytra, black beneath, piceous posteriorly, the legs and antennæ red-brown; head with two strong, obliquely and anteriorly converging carinæ between the antennæ, trifasciate with bright yellow, having some scattered coarse punctures basally; antennæ (♀) about three-fifths as long as the body, rather stout, the second joint somewhat more than half as long as the third, which is equal to the fourth, both a little shorter than the fifth, clothed with very short ashy hairs, which distally become very dense, giving a silvery lustre; prothorax nearly one-half wider than long, narrowed only very slightly from the obtuse angles at the constriction to the apex, the sides but feebly, evenly arcuate; surface finely and closely but clearly perforato-punctate throughout, except in a small convex spot at the middle of the length near lateral third, which is excessively minutely, closely punctulate, clothed throughout with short cinereous hairs, except three transverse fasciæ of bright sulphur yellow, the apex not yellow; scutellum large, densely pubescent, broadly subtriangular; elytra nearly a fourth wider than the prothorax and more than three times as long, slightly tapering, obliquely truncate at the apices, the angle obtuse, not at all dentiform; surface with close-set uneven sinuous bands, two near the base yellow, a broader one near basal third ashy gray, then two finer and yellow, then a broad indefinite one of ashy gray, the apices broadly yellowish, the depressed sutural region almost solidly cinereous; under surface densely clothed with yellow and cinereous hairs indefinitely blending; legs rather thick, closely, cinereously pubescent. Length (♀) 17.0 mm.; width 5.6 mm. Arizona (Oak Creek Cañon—elev. 6000 feet),—F. H. Snow.

This very fine species is wholly isolated and needs no further comment.

Cyllene zuniana n. sp.—Much less stout and more parallel, nearly as convex; head and prothorax deep black, the former nearly as in *snowi*, except that the converging carinæ are feeble and indefinite; antennæ in the type not quite three-fourths as long as the body, more slender but otherwise of nearly similar structure, the second joint shorter, not one-half as long as the third, the latter and succeeding joints with similar very acutely subspiniform outer angles; prothorax nearly one-half wider than long, widest and laterally subprominent at the middle, the sides thence slightly converging and subsinuate posteriorly to the constriction and much more converging and evenly arcuate anteriorly to the apex; surface with rather small but perforate, tolerably close punctures, except in two large convex spots as in *snowi* but larger and also broadly along the median line basally and thence laterally along the summit of the constriction, curving forward toward the isolated spots, these more convex areas very minutely punctulate; surface clothed with short cinereous hairs, crossed by three yellow fasciæ, not entire as in *snowi* but narrowly interrupted at the middle; elytra slightly wider than the prothorax,

nearly as in *snowi*, except that the short hairs, which are less dense and more easily denuded, are wholly cinereous, disposed in two feeble sub-basal fasciæ, then a broader one and thence in three broad subequal transverse spots, not attaining the carina, through the remainder of the length to the apex, the depressed sutural area cinereous, the integument under the fasciæ pale; apices as in *snowi* but more obliquely truncate; legs much more sparsely clothed. Length 12.5 mm.; width 3.8 mm. New Mexico (Magdalena Mts.),—Snow.

The type is probably a male, as the fifth ventral is truncate, but the antennæ are more as in the usual female. It differs from *snowi* very much in the form of the prothorax, more slender antennæ and wholly cinereous elytral vestiture. The type was sent to me as *ornata*, var. *lutosa*, as was also the type of *snowi*, but they are very far from being that species or in any way mutually identical.

In my opinion the species described by LeConte under the name *infausta*, is identical with *decora* Oliv., the figure of the latter given by Laporte and Gory having accidentally lost the median fasciæ of the elytra; it is distributed from Georgia to Kansas, Nebraska and New Mexico, as shown by the series in my cabinet and does not vary in its sharply outlined elytral fasciæ, six or seven in number, any more than the notably constant *robinæ*; it is an entirely distinct species from *chara* Say. The following is an allied species, which is however distinctly different:

Cyllene angulifera n. sp.—Much narrower than *decora* (*infausta* Lec.) and more convex, pale reddish-brown in color throughout—perhaps somewhat immature, though with no additional evidence of immaturity than the pale color; head with the raised interantennal surface indistinct and feeble, broadly triangular; antennæ (♀) filiform but rather stout, barely one-half as long as the body, the second joint fully one-half as long as the third, which is as long as the fourth and somewhat thicker, both much shorter than the fifth; prothorax nearly one-half wider than long, the sides parallel, evenly and strongly arcuate, feebly sinuate at the base, the basal constriction laterally very feeble; surface finely, evenly sculptured and with close, dusky-cinereous pubescence, crossed by three entire cinereous-white fasciæ, the anterior separated from the second by twice the distance separating the latter from the basal fascia; elytra with fasciæ as in *infausta*, except that they are wholly cinereous in color, that the third is much more sharply and posteriorly angulate and that the fifth is continuously transverse, not broken at the carinæ, the latter being obsolete; apices obliquely truncate, not dentate; abdominal segments less pubescent basally and along the middle; legs short and slender. Length (♀) 13.0 mm.; width 3.8 mm. Kansas.

To be known at once from *decora* by its narrower, more convex form, subobsolete constriction of the prothorax, barely traceable

OCHRÆTHES Chev.—This is a neotropical genus, no member of which extends to northern Mexico; it has most of the characters of *Cyllene*, including an equally strong subsutural carina on each elytron, but differs greatly in the form and structure of the prothorax, this being relatively much smaller and subcordate in outline. The various species are sometimes difficult to differentiate, owing to the very dense and more or less confused coating of ochreous pubescence. Perhaps our very isolated type of *Arhopalus* Serv., resembles *Ochræthes* in thoracic structure more closely than any other species of the north temperate fauna. *Ochræthes* is the name of the genus as originally published by Chevrolat and should therefore be adopted, irrespective of correct etymology. It has been printed since as *Ochræsthes*, *Ochræsthes*, *Ochresthes* and *Ochrestes*; so it is better to adhere to the original spelling and avoid doubt.

GLYCOBIUS Lec.—The generic name given by LeConte to *Clytus speciosus* Say, is eminently proper and should not be changed to *Plagionotus*. No true member of that genus approaches *speciosus* in its very broad tapering antennæ, with almost symmetrically emarginate joints, or in its peculiar scheme of ornamentation. *Speciosus* is the most conspicuous and one of the most isolated Clytids of the American fauna, and its special generic name *Glycobius* should rightfully be restored and not merged into the very chaotic mixture now known as *Plagionotus*.

Calloides Lec.

It does not seem to have been noted heretofore that the remarkable differences in color and vestiture pertaining to various examples of *Clytus nobilis* Say, are due entirely to sex. The discovery of this fact renders the systematic treatment of the somewhat numerous species a very easy matter. Besides the five species at present in my collection and defined below, the Mexican *Clytus (Plagionotus) regalis* of Chevrolat, must be included; it almost exactly resembles *biformis* and *muliebris*, but has the sculpture of the pronotum much more coarsely rugulose. The species known to me may be described as follows:

- Legs relatively not stout; elytra never much less than twice as long as wide in either sex and generally much more, sometimes a little shorter in the male than in the female. 2
 Legs very stout; elytra in the male barely three-fourths longer than wide, crossed by a very feeble or barely traceable submedian impression. . . 4

2—Female black, with feeble brownish tinge, the pubescence throughout extremely short, close but inconspicuous; antennæ simple, not quite one-half as long as the body, the outer joints rapidly very short, the last less than one-half longer than wide; prothorax transversely oval, evenly rounded, convex, nearly as wide as the elytra, briefly tubulate at base, wholly immaculate, minutely, confusedly and densely sculptured, with an indefinitely rounded discal area near outer fourth more coarsely and less closely punctate; scutellum large, semicircular, of the general dark ground color; elytra twice as long as wide, with the densely pubescent sulphur-yellow marking very sharply defined, consisting on each of a transversely oval subbasal spot, a small marginal one at basal fourth or fifth, a perfectly circular discal spot nearer the suture than the margin and just behind basal fourth, a fine transverse entire and slightly arcuate fascia just behind the middle and another suboblique fascia, broken into two spots, between the latter and the apex, which is not pale, minutely, obliquely and simply truncate; under surface clothed with minute plumbeous hairs, scarcely at all variegated, the prosternum more shining and transversely rugose. Male more slender than the female, black, the elytra paler, red-brown, dull in lustre like the female, the antennæ a little more than half as long as the body, the prothorax similar but fully as wide as the elytra and having a slender longitudinal crescent at lateral fifth, which is very sharply defined and more coarsely sculptured though not elevated; elytra similar throughout but rather more tapering and either wholly immaculate or with very minute yellow points, representing one or more of the large yellow spots of the female; under surface, prosternum and legs nearly similar. Length (σ^7) 17.5–22.0, (σ^7) 22.0 mm.; width (σ^7) 5.3–6.8, (♀) 6.9–7.2 mm. North Carolina, New Jersey, Indiana and Wisconsin.....**nobilis** Say

Female nearly as in *nobilis*, except that the spot between basal fourth and third on each elytron is invariably transverse and rectangular and not circular, and the apex more or less yellow.....3

3—Female larger and more elongate than in *nobilis*, similarly colored and with densely dull integuments; antennæ nearly similar but not deep black; prothorax of like form but more transverse and about as wide as the elytra, the fine, confusedly punctato-rugulose sculpture nearly uniform throughout; elytra a little longer, almost similarly maculate with spots and fasciæ of dense sulphur-yellow pubescence, except as above stated and in having the ante-apical fascia entire and not resolved into two spots and in having the apices almost solidly yellow, only the actual tip dark, also with a longer oblique truncature, with well marked external angle; under surface with very short uniform plumbeous pubescence, the apices of the ventral segments more distinctly yellow laterally and the prosternum more coarsely and densely rugose than in *nobilis*; legs longer, rufescent and not black. Male with the prothorax as in the female, the sinuous sublateral line of coarser sculpture barely traceable; elytra less elongate, paler red-brown, with the transverse spot near basal fourth much reduced, the fine median fascia feeble, faint and nubilous, the ante-apical

represented only by a fine subsutural dot and the apices not at all yellow. Length (σ^7) 22.5, (♀) 23.5 mm.; width (σ^7) 7.3, (♀) 7.5 mm. New Mexico (Fort Wingate) and Colorado. *biformis* n. sp.

Female nearly as in *biformis* but blacker, the elytra much deeper black and more velvety, the head between the antennæ more elevated and more deeply, longitudinally sulcate, the last antennal joint, not acutely oval and as long as the preceding as in *biformis*, but obtuse and much shorter than the tenth, the prothorax of similar form and sculpture but less transverse and smaller, much narrower than the elytra, the latter of nearly similar form and ornamentation, except that the ante-apical fascia is broken near the suture and the solid apical yellow area replaced by a fine transverse fascia near the tip, the apices not at all truncate but with the sutural angle evenly and broadly rounded; under surface with the prosternum more evenly punctate and less rugose, the denser apical hairs of the lateral part of the ventral segments paler yellowish-cinereous; legs nearly similar. Length (♀) 22.0 mm.; width 7.2 mm. New Mexico (Jemez Springs).

muliebris n. sp.

Female smaller, narrower, more parallel and less convex than in any of the preceding, dull black, the elytra piceous-brown; head nearly as in *biformis*, the antennæ paler, pale rufous, but little more than two-fifths as long as the body, with the outer joints still shorter, the tenth but very slightly longer than wide, the eleventh oval and a little longer; prothorax finely, evenly and densely sculptured, more globular, only between a fourth and fifth wider than long, otherwise similar, distinctly narrower than the elytra, the latter almost parallel, rather more than twice as long as wide, the sutural margin rounding outwardly at apex to meet the rounding sides in a very blunt angle; ornamentation nearly as in *biformis*, except that all the spots are smaller, and that the subbasal fascia is narrower and more basal than in any other, being on the basal convex declivity; the ante-apical is broken at the suture as in *muliebris*; legs and under surface nearly similar. Male more slender, the prothorax more strongly rounded at the sides, the nubilous feeble marking of the elytra nearly as in the male of *biformis*, the antennal joints shorter than in that species. Length (σ^7 , ♀) 18.0–19.5 mm.; width 5.6–5.8 mm. Colorado.

coloradensis n. sp.

4—Form broader, more oblong and subparallel, the elytra more depressed, the color throughout deep black, the head and prothorax nearly as in *biformis*; prothorax (σ^7) as wide as the elytral base, strongly convex, not densely, confusedly rugulose as in all the preceding species, but with small and irregular, very close-set but definite punctures and more shining interspaces, the abruptly outlined arcuate sublateral crescent somewhat depressed and very coarsely punctate; elytra without ornamentation in the male, the apices minutely and obliquely truncate at the sutural angles; under surface less densely punctate and pubescent and more shining; vestiture throughout very short, only moderately dense, dusky and barely visible. Length (σ^7) 22.0 mm.; width 7.1 mm. California.....*lorquini* Buq.

These species differ from each other chiefly in general outline, in the different form of the post basal elytral spot, in the apical vestiture and modification of the elytral apices, the last being rather distinctive in all of them; *lorquini* differs, in addition, by the character of the pronotal sculpture, more depressed elytra and very much heavier legs. *Regalis* Chev., differs in the much coarser rugosity of the pronotum. The occasional subsuturally broken ante-apical fascia is a vestigial character due to the former presence of a subsutural carina, as in *Cyllene*; at present all trace of this has disappeared but it is distinctly observable though very obtuse in *Glycobius*.

Calloides "*nobilis* var. *mormonus*" Schaeffer, (Journ. N. Y. Ent. Soc., 1911, p. 124) belongs with the above described *biformis*, *muliebris*, *coloradensis* group, but is larger than any of these species (27 mm.) and, as the fasciæ are said to be all of equal width, must have much broader median and ante-apical fasciæ. The form of the elytral tips is not stated, but it differs from *biformis* in having the median fascia below the middle; in *biformis* it is exactly at the middle; in *muliebris* it is a little below the middle as it is in *nobilis*, but *muliebris* has a much smaller head and prothorax than in *biformis* and more slender antennæ, and the very peculiar elytral tips are probably not duplicated in *mormonus*; so I believe *mormonus* to be still another species and not identical with any here described.

Xylotrechus Chev.

This and the remaining genera of the above table differ from the preceding in having the abdominal process acute and the elytra without trace of the subsutural carina, thus indicating a distinct section or group of the Clytids; the body also is more slender and subcylindric as a rule. Removing *planifrons* Lec., as suggested by Leng, the genus is clearly limited and easily recognized by the bicarinate front. *Fuscus*, of Kirby, is by no means a synonym or variety of *undulatus* but is a distinct species, having a suffused pronotal tracery of pale hairs almost exactly like that of *nauticus*, much shorter elytra and a system of fine and very irregular elytral lines also much more closely resembling *nauticus* than *undulatus*; it differs from *nauticus* in the parallel, subevenly rounded sides of the prothorax; I have a pair in very good state of preservation

taken in Maine, by Mr. C. A. Frost. *Interruptus* is a subspecies or variety of *undulatus*, but *lunulatus* Kirby, I have not been able to identify. *Undulatus* represents a very common American type of the genus, including a number of species all distinctly characterized; as far as represented in my cabinet they may be known by the following tabular statement. The remarkable sexual difference in the sculpture of the head does not seem to have been noticed heretofore; in the male the sculpture is very minute, dense and dull, excepting in an abruptly defined basal band ascending at the sides along the inner margin of the eyes, this band being shining and coarsely punctate; in the female this structure is only traceable by coarser punctures at the base of the occiput than elsewhere, but the front is more pubescent. The males of *undulatus* seem to be far more abundant than the females, which is not the case apparently with the west coast forms here defined; the allies of *undulatus* are as follows:

- Prothorax inflated and strongly rounded at the sides, evidently wider than the base of the elytra, brownish-black, the legs dark red-brown, the antennæ piceous; head finely, strongly, rugosely punctate, more coarsely medially toward base and along the latter; antennæ but slightly overlapping the base of the elytra, the third joint not quite as long as the first; prothorax fully one-half wider than long, widest just behind the middle, sculptured and ornamented with narrow apical and basal dense pale pubescence as in *undulatus*; elytra similar but rather more elongate, the apices obliquely arcuato-truncate; pale spots as in *undulatus* though partially yellow and with the ante-apical fascia subentire, not broken into two spots; legs moderate; abdomen with numerous long erect hairs, the shorter white hairs denser along the segmental apices. Length (♀) 14.5 mm.; width 4.2 mm. Colorado (Boulder Co.).. **inflatcollis** n. sp.
- Prothorax not inflated and always narrower than the elytral base, more broadly rounded at the sides, ornamented as in *undulatus*.....2
- 2—External angle at the elytral truncature very obtuse and blunt; form stouter than in *undulatus*.....3
- External angle sharply marked and not blunt, the truncature straight, oblique.4
- 3—Color blackish-brown, black anteriorly, the legs and antennæ piceous-black, paler distally; head finely and densely but not deeply punctato-rugulose, the converging frontal carinæ more feeble than in any other of the *undulatus* group, flatter and ill-defined; third antennal joint not quite as long as the first; prothorax two-fifths wider than long, parallel and almost evenly rounded at the sides, the fine confused sculpture closer and stronger than in *undulatus*; elytra nearly as in that species in form and ornamentation, the suture

more arcuately dehiscent at apex, the truncature oblique and straight but less well defined, the sutural angles being very obtuse and somewhat rounded; posterior elytral spots larger but separated by longitudinal rays nearly as in *interruptus*; abdomen narrowly annulate, the legs moderate. Length (♀) 14.0 mm.; width 4.7 mm. British Columbia (Aldermere),—Keen.....**columbianus** n. sp.

Color deep black throughout, the legs and antennæ feebly picescent distally; maculation throughout as in *undulatus* but more developed and pure white, the apical margin of the pronotum broader, denser sublaterally, giving the appearance of an inclosed spot; head and antennæ in form and sculpture nearly as in *undulatus* but with the third antennal joint shorter, not longer than the first; prothorax similar in form and sculpture but larger, just visibly narrower than the elytra, having near basal third a small spot of short sparse white pubescence, which seems never to appear in *undulatus*; elytra less elongate, more cuneiform, only about twice as long as wide, all the spots clearly separated, the apical truncature less oblique and somewhat arcuate; spots and annuli of the under surface pure white and very sharply defined; legs moderate. Length (♂) 13.3 mm.; width 4.2 mm. California (Siskiyou Co.)..**albonotatus** n. sp.

4—Third antennal joint scarcely as long as the first; elytra very rapidly narrowed from base to apex, strongly cuneiform, markings all yellow; head and prothorax throughout nearly as in *undulatus*, the sides of the latter rather more strongly rounded medially and correspondingly more sinuate near base and apex; elytra maculate as in *undulatus*, rather shorter, paler brown in color; legs and antennæ pale red-brown but almost similar; apical pale annuli of the abdomen more diffused, especially toward the sides. Length (♀) 12.5 mm.; width 4.0 mm. Idaho (Cœur d'Alene),—J. A. Leyden.

montanicus n. sp.

Third antennal joint much longer than the first in both sexes; maculation whiter. 5

5—Form more slender than the first three of the above species, the elytra but slightly narrowed from base to apex and much wider than the prothorax, which is very moderate in size, two-fifths wider than long, with the sides broadly rounded; color dark red-brown, the legs and antennæ rufescent; apical and basal pale pubescent margins of the prothorax always narrow, sharply defined, more or less interrupted at the middle; elytral spots disconnected in the ante-apical fascia, the ground uniform or sometimes slightly sprinkled with paler hairs, sometimes with longitudinal rays of sparse pale hairs in more than apical half, this being the typical form as figured but not described by Say and the typical form of *interruptus* as figured by Laporte and Gory; legs moderate, the hind femora extending barely behind the elytra in the male, with the hind tarsi compressed as usual but only of moderate length, the first joint only about one-half longer than the remainder. Length (♂) 10.0–13.5 mm.; width 3.0–4.0 mm. Region of the Great Lakes and in Indiana.

undulatus Say

Form, coloration and maculation almost exactly as in *undulatus*, the

elytra rather less elongate, the prothorax somewhat less transverse, only about a third wider than long; legs more slender and much longer, the hind femora extending well behind the elytra in the male and the hind tarsi longer and more slender, with the basal joint almost twice as long as the remainder, shorter in the female, the femora extending barely to the elytral tips. Length (♂, ♀) 11.5-12.0 mm.; width 3.5-3.6 mm. California (locality unrecorded).

longitarsis n. sp.

Of *undulatus* I have at present five examples, all males, and have not seen the female; these five males exhibit considerable inconstancy in the pubescence of the elytra as stated, but in no other respect, except that the two examples having no scattered hairs and no vestige of longitudinal rays, have on the whole, slightly narrower and more elongate elytra; as these longitudinal rays are not mentioned by Say in his description we can legitimately regard the unrayed and more slender form as *undulatus* and the rayed form, with slightly shorter elytra, as the variety *interruptus* of Laporte and Gory; further light gathered from larger series is needed however.

Of a form of *nautilus*, which I construe to be *gramineus* Hald., because of its slightly broader elytral markings, accompanied by more obvious pallid lines of the integument, there is in my cabinet a single female example from southern Oregon.* In this species the head in the male has two separated areas of minute, densely dull sculpture, which are wholly wanting in the female, and in the latter sex the pronotal granules are coarser and more transversely carinuliform than in the male; *nautilus* varies enormously in size as in some other species of this genus as well as *Neoclytus*.

In the *sagittatus* group there is a loosely and pallidly pubescent sutural line, accompanied for the most part by pallid integument, from the elytral base to about apical third, with two short transverse offsets, one near two-fifths, the other at about two-thirds from the base; the elytral truncature is limited externally by a distinct spine and the prothorax is generally a little longer than

* I have before me a single male labeled "Michigan," which is more parallel in form than *nautilus* or *gramineus*, but which has the same rather broad pallid lines of the integument as the latter; it is probably the male of *gramineus*, though I have seen no reference to so extended an easterly range of distribution. The densely dull cephalic patches of this male are triangular and more clearly separated anteriorly than in *nautilus*; so it may be that *gramineus* should be considered specifically different from the latter.

wide, bitruncate, with the sides feebly arcuate, becoming rather fuller behind the middle, the surface strongly granose and much more coarsely so in the female than in the male. The head is nearly as in *undulatus* in both sexes, minutely sculptured and dull in the male, excepting a narrow shining basal band, extending forward in a fine line bordering the eyes internally and coarsely punctate, almost uniformly and more coarsely punctato-rugose throughout in the female. It is a very clearly circumscribed group, containing several species and subspecies as follows:

Body more rhombiform, very convex, with the elytra tapering very rapidly from base to apex, dark red-brown in color throughout; head well developed, the frontal carinæ low and rather ill-defined, separated by much more than the distance between either and the supra-antennal carina, the vertex behind the line of the antennæ not carinulate medially; antennæ (σ^7) fully one-half as long as the body, the third joint distinctly longer than the first, the outer joints feebly canaliculate on their under surface nearly to the base; pronotum uniform in sculpture and vestiture, having numerous sharp transverse granules and short, sparse, inconspicuous and subdecumbent pale hairs, also a few that are longer and erect; scutellum less than twice as wide as long, arcuato-truncate at apex; elytra distinctly wider than the prothorax, slightly more than twice as long as wide, strongly, closely punctate, the punctures transversely confluent, the marginal pale and sparsely pubescent line with two small offsets opposite the offsets of the sutural line but not very well developed; under surface uniformly and sparsely punctulate, coarsely pilose; legs long, the femora notably stout, very sparsely punctate and pilose, scarcely more than attaining the elytral tips in the male. Length (σ^7) 17.5 mm.; width 4.9 mm. Florida.

sagittatus Germ.

A—Similar to *sagittatus* but smaller, more slender, the elytra less strongly tapering, relatively more elongate and with the punctures more clearly defined and less coalescent; head with the frontal carinæ fine and sharply defined, exactly trisecting the space between the supra-antennal carinæ; antennæ more slender and notably shorter, the third joint longer than the first, the canaliculation of the outer joints shorter and more apical; vertex with a fine shining carina extending almost to the base; elytra only slightly wider than the prothorax; scutellum more than twice as wide as long, circularly rounded; pronotum with smaller and closer transverse carinules and with more numerous erect bristling hairs; legs shorter, the femora much more slender, the posterior not attaining the elytral tips. Length (σ^7) 12.0 mm.; width 3.2 mm. Pennsylvania.....**pubescens** Hald.

Body more slender, much less rhombiform, the pale pubescence coarser and much longer, frequently sprinkled over the entire surface

outside the sutural and marginal lines, which are disposed nearly as in the two preceding.....2

2—Form subcylindric, dark red-brown, feebly shining, the coarse pale hairs numerous throughout, giving a gray effect; head with the frontal carinæ feeble, uneven and confused, more widely separated than from the supra-antennal carinæ; vertex with numerous short stout pale hairs, feebly impressed on the median line near the base; antennæ (♂) less than one-half as long as the body, the third joint much shorter than in *sagittatus*, barely as long as the first, the canal-iculation of the outer joints apical; prothorax as wide as long, clothed not densely with coarse and decumbent and longer erect gray hairs; sculpture coarser than in *sagittatus* and consisting of transversely longer, irregular carinules and granules; scutellum as in *pubescens*; elytra but little wider than the prothorax, very feebly tapering, fully two and one-half times as long as wide, the briefly biramose sutural and marginal lines of pubescence better developed than in *sagittatus*, and, in addition, a sprinkling of pale hairs throughout and a small condensed point at the middle of each near the base; punctures strong, dense, transversely confluent and rugose; legs shorter than in *sagittatus*, the femora less stout, the posterior rather far from attaining the elytral tips. Length (♂) 15.5 mm.; width 4.0 mm. Wisconsin (Bayfield),—Wickham.....**cylindrus** n. sp.

Form less parallel, the elytra more tapering and much wider than the prothorax, which is rather longer than wide, more parallel from behind the middle to the apex and with very large and well separated strong granules, which are but slightly transverse and separated by polished integument; color nearly black throughout, the pale hairs much less numerous than in *cylindrus*; head strongly punctato-rugose throughout, the front with three subparallel carinæ in a confused cluster, the median and anterior the largest; antennæ (♀) very short, barely extending to the base of the prothorax, the third joint scarcely as long as the first; vertex with very few short inconspicuous hairs; prothorax almost glabrous but with numerous coarse pale decumbent and erect hairs on the flanks; scutellum as in the preceding; elytra a little shorter than in the preceding, the punctures not so coarse but very much more densely confluent, the sutural and marginal biramose lines well developed, the offsets almost meeting just outside the median line of each elytron, the condensed point of the preceding larger and obliquely lineiform; scattered hairs elsewhere very few in number; legs short, the hind femora with more numerous punctures and hairs than in any of the preceding. Length (♀) 16.5 mm.; width 4.5 mm. New Mexico.

salebrosus n. sp.

Some of the characters detailed under *salebrosus*, such as the larger pronotal asperities and the more developed pubescent lines of the elytra, are in more or less great part sexual in nature, the sculpture of the vertex and the short antennæ wholly so, but the closer punctures of the hind femora are probably not sexual

and there are enough special features, generally asexual in other parts of the genus, such as the form of the prothorax, to show that the female type described really represents a species distinct from any of the others; they all seem to be rather rare and seldom taken in series. The general characters of the group are a mixture of those of the *undulatus* and *nauticus* groups, with some, such as thoracic form and elytral ornamentation, that are essentially peculiar.

The females of the *insignis* group resemble *Clytus*, as represented by *planifrons* for example, much more closely in form and ornamentation than they do any of the other types of the genus *Xylotrechus*; the males differ greatly from the females in being very pale red-brown in color, with more suffused vestiture and indistinct or partially obsolete fasciæ, which are so well developed in the female. So, although the species of this group are truly *Xylotrechus*, as shown by the peculiar sexual modifications of the head, consisting of two large, very finely sculptured triangular opaque patches on the vertex of the male, which are completely obsolete on the more coarsely sculptured vertex of the female, and, as shown by the frontal carinæ, they nevertheless constitute a remarkably distinct and aberrant group of the genus in the sexual diversity referred to above, which is analogous to that even more developed in the genus *Calloides*. The species of this group in my collection may be defined as follows:

- Elytra with the curved transverse fascia before the middle in the female equal and entire, mounting more narrowly along the suture to a point some distance behind the scutellum, sometimes altogether wanting and always greatly reduced in the male.....2
- Elytra as in the preceding, except that the fascia before the middle in the female ends just outside of the median line, the continuation indicated by a small elongate spot near the margin.....4
- 2—Elytral fasciæ in the female white in color and all rather narrow; frontal carinæ fused into a tumid oblong punctate glabrous spot; annuli of dense hairs at the apices of all the abdominal segments narrow and white; body black in color throughout, the legs and antennæ testaceous. Length (♀) 14.5 mm.; width 4.7 mm. Colorado.....**obliteratus** Lec.
- Elytral fasciæ in the female bright sulphur-yellow in color and much broader:.....3
- 3—Form more elongate than in the preceding, larger in size, the female black, with the elytra blackish-brown, the legs and antennæ rufous; frontal carinæ only feebly marked, the intermediate surface flat,

strongly punctate and glabrous; prothorax larger than in *obliteratus* and more tubulate at base, as wide as the elytra or very nearly, the apical and basal margins finely yellow, the apical band angularly emarginate and almost divided at the middle; sculpture very fine and densely punctato-rugulose throughout; elytra slightly more than twice as long as wide, the posterior half of the scutellum and adjoining lateral small spot, a broad oblique discal spot behind the base, a broad sinuate fascia as before described near basal two-fifths, a feebly oblique and entire narrower fascia near apical third and the apex, rather broadly, yellow; abdomen with the yellow annuli much wider than in *obliteratus*. Male rather more slender and cylindrical, with a still larger and more medially tumid prothorax, pale red-brown in color throughout, the frontal tumidity similar, the prothorax wider than the elytra, less arcuate or nearly straight in median third at the sides and not at all tubulate at base, the surface still more finely sculptured and densely opaque, the pale apical margin very fine, the basal wanting, the vestiture consisting of minute, sparse and very inconspicuous hairs; elytra with only the oblique post-basal, post-median and apical spots and bands and these reduced; abdomen uniformly, closely pubescent, without condensed pale annuli. Length (σ , φ) 15.0-16.0 mm.; width 4.4-5.0 mm. California (locality unrecorded).....*insignis* Lec.

Form nearly as in the preceding but a little smaller and notably more slender, the red-brown color slightly more obscure in the male, which has very much more suffused vestiture than in *insignis*, sometimes almost completely obliterating the spots and fasciæ; front and triangular opaque spots nearly similar; prothorax nearly similar in form and sculpture, even more tumid medially between the more foveiform depressions just before the middle near outer fourth, the short decumbent pubescence coarser, paler and closer; elytra much narrower and somewhat less convex than in *insignis*, with the same spots and fasciæ as in the female of that species though much reduced, the post-basal fascia but seldom wanting, the general vestiture more or less dense and yellow and not rather sparse, fulvous and less visible as it is in *insignis*; under surface wholly immaculate, densely clothed with yellowish-tawny pubescence. Length (σ) 14.0-16.0 mm.; width 4.0-4.6 mm. California (Hoopa Valley, Humboldt Co.).....*incongruens* n. sp.

4—Form throughout as in *insignis*, the female having nearly similar coloration, the elytra more deeply black; frontal carinæ fine but more sharply defined, the surface between them more concave; prothorax of similar form and vestiture, and likewise but very little wider than long, except that it has the apical yellow band, not angularly emarginate, but broadly and gently sinuate medially and the fine subvermicularly rugulose sculpture a little coarser medially; elytra but slightly wider than the prothorax, otherwise nearly as in *insignis*, except as above stated and in having the space between the post-median and apical yellow fasciæ less extended; apices similarly obliquely arcuato-truncate, with the angle very obtuse and narrowly

rounded; under surface, legs and antennæ nearly as in *insignis*. Length (♀) 16.7 mm.; width 5.0 mm. California (Los Angeles Co.).

diruptus n. sp.

Of *insignis* Lec., the two males and two females before me serve as a very good criterion for estimation of specific value in the other forms. I obtained four males of *incongruens* on a low tree on one occasion but could never find more of them and do not know the female; *diruptus* may be more properly a subspecies of *insignis* than a distinct species.

Neoclytus Thoms.

This genus is not quite so well defined as the preceding, but may nearly always be clearly recognized by the longitudinal areas or lines of transverse carinules on the pronotum and the shorter, steeper and unmodified front, without carinæ either medial or supra-antennal; this serves to distinguish it very well from *Xylotrechus* but is not always so decisive in regard to *Clytanthus*. It includes two moderately definite groups, one, represented by such species as *luscus*, *devastator* and *scutellaris*, having long terminal spines on the femora, and the other, including such forms as *conjunctus*, *erythrocephalus* and *muricatulus*, which either have the terminal spines very short or altogether wanting as in *Xylotrechus*. The two following species have the femora as in the second of these groups:

Neoclytus fulguratus n. sp. (Thomson i. litt.).—Form and general structure nearly as in *longipes* but stouter and with fewer and shorter bristling erect thoracic hairs, dark brownish-piceous in color throughout, the elytra a little less dark; condensed areas pure white; antennæ (♂) slender, filiform, barely half as long as the body, the second joint about half as long as the third, the latter slightly longer than the fourth and very much shorter than the first; prothorax about a fourth longer than wide, parallel, with evenly and moderately arcuate sides throughout, the apex slightly arcuate, subequal to the base; surface densely and strongly punctato-rugulose and with three tolerably regular series of well spaced transverse carinules, the vestiture sparse and even, excepting a small condensed point near each side at the middle of the length, more distinct than in *longipes*; elytra barely wider than the prothorax and twice as long, feebly tapering, the apices obliquely truncate, with obtuse blunt angles; surface with scattered coarse white decumbent hairs, denser indefinitely at base and along the suture to the middle, this vitta having a short broad offset near basal third and, just behind this, an entire transverse fascia, which is strongly and anteriorly angulate submedially and thence more posteriorly oblique to the sides; also, at apical



fifth, an entire narrow fascia, which is anteriorly angulate with that on the other elytron at the suture, the apices not densely pubescent; legs slender, the posterior long, with the femora extending well behind the elytra. Length (σ^7) 9.8 mm.; width 2.6 mm. Texas.

This species is frequently confounded with the northern *longipes* of Kirby, but differs in its more laterally rounded and less slender, more coarsely sculptured and more definitely triserially carinate prothorax and decidedly in the disposition of the elytral fasciæ; in *longipes* the base is loosely pubescent, the suture has near basal third a small rhombus and near the sides a small spot, wholly absent in *fulguratus*, and, just behind the middle and very much posterior to the zig-zag fascia of the latter, a transverse fascia which is much less angulate on each elytron; the posterior fascia is nearly as in *fulguratus* but rather more oblique anteriorly to the suture, finer and not extending to the sides.

Neoclytus infans n. sp.—Form very slender, cylindrical, black throughout and dull, the legs and antennæ piceo-testaceous; antennæ (σ^7) very slender, slightly thickened apically, nearly three-fifths as long as the body, the second joint half as long as the third, which is a little shorter than the first, the latter unusually slender; prothorax distinctly elongate, arcuate at apex, with the sides parallel, evenly and distinctly arcuate throughout; surface with only extremely small and scarcely observable hairs, densely, finely punctate, with a broad lateral area having scattered granules and a median line of transverse carinules; scutellum small, nearly nude; elytra as wide as the middle of the prothorax, two and one-half times as long, perfectly parallel and straight at the sides, rounding at apex to the distinct external angle of the oblique truncature, having each, of dense white pubescence, a narrow juxta-sutural line in fully basal fourth, curving outwardly briefly and more diffusely at base, a small sublateral point at basal third, an oblique line just behind the middle and not attaining side or suture and another oblique line near the apex, attaining the suture but not quite the sides; under surface sparsely punctulate and pubescent, with white condensation on the mes-epimera, posterior half of the met-episterna and lateral part of the apices of the first two ventral segments; legs very slender, the posterior femora extending distinctly behind the elytral tips. Length (σ^7) 6.8 mm.; width 1.7 mm. California (Siskiyou Co.),—Koebele.

Belongs near *muricatus* but differs in the more slender and less claviform basal joint of the antennæ, relatively longer second joint, more elongate and more medially carinulose prothorax, more slender legs and very much longer and more slender basal joint of the hind tarsi.

The following may be considered a subspecies or variety of *luscus*:

Neoclytus strictulus n. subsp.—General characters and ornamentation precisely as in *luscus* but narrower and more cylindric, the prothorax without trace of the two large nubilously red areas of that species and having the sculpture more uniform, the very short transverse carinules of the tumid median line less evident; antennæ slightly more slender. Length (♀) 9.0 mm.; width 2.6 mm. A single example, rather smaller than any example of typical *luscus* at hand, found unlabeled in the Levette collection.

Distinguishable from *luscus* principally by the narrower form and thoracic coloration.

The following is a subspecies of *conjunctus*, the latter occurring in the middle coast regions:

Neoclytus occiduus n. subsp.—Similar to *conjunctus* but narrower, the elytra much less tapering from base to apex, the elytral ornamentation precisely similar; antennæ (♂) a little shorter, much more slender, especially the basal joint which is only about two-thirds as thick; prothorax less evenly rounded at the sides, more swollen just behind the middle, more evenly pubescent, with the sublateral ridge almost obsolete; legs shorter and more slender, the hind thighs (♂) not quite extending to the elytral tips. Length (♂, ♀) 9.0–12.0 mm.; width 2.4–3.1 mm. Labeled simply "California" in the Levette collection.

The four examples seem to indicate a moderately definite subsidiary form. The following is apparently a species distinct from *conjunctus*:

Neoclytus tularensis n. sp.—Similar to *conjunctus* but a little narrower, more convex and more elongate, the elytral maculation similar but broader and with the submedian lines diverging from the suture filled solidly with white pubescence, having its anterior margin transverse across the suture; antennæ (♂) similar but a little shorter; prothorax more transverse, more strongly rounded at the sides and more arcuate at apex, the brown hairs in the large concavity at each side of the sublateral ridge not dense but long, coarser and much sparser; scutellum similarly nearly nude; elytra distinctly tapering, barely as wide as the prothorax, each narrowly rounded at tip; legs similar, the hind femora extending a little behind the elytra; abdomen evenly banded. Length (♂) 12.8 mm.; width 3.4 mm. California (Kaweah).—Hopping.

In the male of *conjunctus* the dense pubescence seems to obliterate completely the first abdominal suture, but in *tularensis* all the sutures are distinctly indicated by the arrangement of the four broad pubescent bands.

Clytanthus Thoms.

In the European fauna this is the largest genus of the Clytini, but in America it is very poorly developed, only two species being

known at present, *uricola* Oliv., and the new species described below; *albofasciatus* is here made the type of a separate genus. *Clytanthus* resembles *Neoclytus* closely, differing principally in the even and fine dense sculpture of the pronotum, without isolated asperities or carinules, and in the dilated anterior tarsi of the males. There are, however, some other peculiar crural characters, present at least in our two species, the middle femora being notably stout in the male and the middle tibiæ bent and thickened apically, with the apex lobed; these characters are also somewhat evident in the female as well, but whether they are in any way general among the numerous palæarctic species I am not able to state.

Clytanthus catulus n. sp.—Subparallel, the elytra almost parallel and very much less tapering than in *uricola*, black, the elytra feebly picescent, the legs pale flavo-testaceous, the femora black, the middle and posterior pale basally; antennæ moderately slender, slightly thicker distally, a little more than half as long as the body, pale flavate, the basal joint dusky and the outer four nearly black, the seventh transitional in color; second joint two-fifths as long as the third, which is longer than the mutually equal first or fourth; prothorax fully as long as wide, wider at the broadly arcuate apex than at base, the sides in about apical half very feebly converging, rounding medially and thence straighter and converging to the basal margin; surface convex, very densely, finely sculptured and dull, scarcely at all pubescent, except the narrow yellow apical and basal margins; scutellum transverse, rounded, densely clothed with yellow pubescence; elytra wider than the prothorax and two and nearly one-half times as long, obliquely truncate at the apices, the external angle sharp but simple, with a transverse discal spot of dense yellowish pubescence near the base, a straight subsutural line from basal sixth to third, a medial transversely oval spot just before the middle, another smaller, more anterior and near the side and, near apical fourth, an oblique fascia from near the side to the suture; under surface with spots and ventral annuli nearly as in *uricola*. Length (♂) 8.0 mm.; width 2.2 mm. Wisconsin (Bayfield),—Wickham.

Differs from *uricola* in its smaller size, rather less elongate and more slender legs, and very greatly in antennal structure, the basal joint being shorter and the outer joints shorter and more compactly joined, being more parallel and less narrowed basally or less oval; it also differs in the disposition of the anterior elytral spots and in the position of the ante-apical fascia, which in *uricola* is but little more than three-fifths from the base and therefore much more distant from the apex than in *catulus*. The female in *uricola* seems to be very much rarer as well as smaller than the male.

Clytoleptus n. gen.

This genus differs from *Clytanthus* in the slender, subparallel and more depressed form of the body, in the two subbasal pronotal swellings, which are however obsolescent in the female and in the long, very slender and filiform antennæ; it also differs, so far as our fauna is concerned, in the unmodified legs and anterior tarsi of the male and in the narrower met-episterna. The only forms at present in my cabinet are the following:

Clytoleptus gracilicornis n. sp.—Slender, parallel, very moderately convex, dull, the elytra somewhat shining, piceous-black, the entire elytra before the post-medial fascia, the prosternal coxal region and entire sterna of the hind body pale testaceous, the legs and antennæ infusate, the femora throughout testaceous; antennæ (σ^7) about as long as the body, very slender, not incrassate distally, the second joint two-fifths as long as the third, which is much longer than the first or fourth; prothorax longer than wide, parallel, with evenly and broadly rounded sides and feebly arcuate apex; surface with very short, fine, sparse and indistinct decumbent hairs and very finely, densely, confusedly punctate, a little more strongly and granularly on the subbasal swellings; scutellum pale, feebly pubescent; elytra as wide as the prothorax and between two and three times as long, with a very fine line of condensed white hairs from outer and basal third, curving rapidly forward to the suture just behind the scutellum, and another a little wider from the side at posterior third anteriorly and anteriorly arcuate to the suture just behind the middle, the apex with loose and longer white hairs; middle and hind legs (σ^7) more equal than in *Clytanthus* and both very much longer than the anterior, the middle femora but slightly clavate, the tibiæ slender and simple, the basal joint of the hind tarsi about a third longer than the remainder. Length (σ^7 , ♀) 7.0–7.7 mm.; width 1.75–1.9 mm. Indiana.

The hind femora of the male are but minutely bispiculate at tip and extend slightly behind the elytra; in the female the legs gradually increase in length antero-posteriorly and the antennæ are three-fourths as long as the body. It differs from *albofasciatus* Lap.-Gory, in the partially pale upper surface, but principally in the form of the post-median elytral fascia, which in that species broadens greatly toward the suture, so that its hind margin is almost transverse.

Clytoleptus tristis n. sp.—Body shorter and stouter than in the preceding and very deep black throughout, the tarsi piceo-rufous; head somewhat shining, finely and closely punctate; antennæ (♀) much less slender than in *gracilicornis*, deep black, gradually picescent, very feebly tapering and subfiliform distally, clothed with minute ashy hairs, a fringe of longer hairs beneath basally, four-fifths as long as the body, the second

joint nearly twice as long as wide and almost half as long as the third, which is a little longer than the fourth but very much shorter than the fifth, the outer joints still long and slender; prothorax as in the preceding though not uniformly and strongly puncto-reticulate, but more finely, densely puncto-rugulose medially, rather more elongate; scutellum shorter and broader; elytra shorter, but little wider than the prothorax and rather less than twice as long, the suturally ascending white streak from near basal third nearly similar, but with the white fascia behind the middle straight and only feebly, anteriorly oblique from near the sides to near the suture and composed of separated white hairs, the apices similarly obliquely truncate and loosely cinereo-pubescent, the sutural angle broadly rounded, the external prominent; legs stouter but even longer, the minute femoral punctures mingled with others less minute. Length (♂) 8.4 mm.; width 2.2 mm. Pennsylvania (Lemoine),—H. B. Kirk. Bred from grape.

This species is notably different from *gracilicornis* in its longer and stouter antennæ and legs, very black coloration, rugulose median sculpture of the pronotum and in having the post-median white fascia of the elytra less oblique and not evenly arcuate but straight.

Clytus Laich.

Assuming as types of this genus the American *marginicollis* and *planifrons*, the body is stouter, more convex and more cylindrical than in *Clytanthus*, the middle legs unmodified in the male and the met-episterna a little wider; the front, antennæ and very approximate anterior coxæ are almost similar. Besides *planifrons* Lec., and *marginicollis* Lap.-Gory, we have a third, rather closely allied to *marginicollis* definable as follows:

Clytus carolinensis n. sp.—Form and ornamentation as in *marginicollis* but black throughout above, except the extreme basal margin of the elytra, which is pale; legs and antennæ pale testaceous, the latter gradually blackish distally; head and pronotum clothed sparsely with long and very fine, perfectly erect hairs, the elytra with short hairs, longer and bristling basally at the sides; head strongly, closely punctate before, more opaque and more coarsely, very shallowly reticulate behind, the line of the antennæ, the latter short, incrassate distally, more widely separated than in *marginicollis* but otherwise nearly similar; prothorax throughout nearly as in that species, the dense sculpture rather shallower; scutellum and elytra nearly similar throughout; under surface and legs nearly similar but with the scattered hairs longer and more bristling. Length 9.8 mm.; width 2.8 mm. North Carolina (Southern Pines),—Manee.

Differs from *marginicollis* in its blacker elytra, pale only at the basal margin, in the shallowly reticulate and not deeply punctate

posterior part of the head and greater part of the pronotum, and more widely separated antennæ, but especially in the very different vestiture of the head and prothorax, which parts in that species are sparsely clothed with irregularly decumbent or less erect and very coarse hairs, which are much paler in color.

Clytopsis n. gen.

The type of this genus is a species which I have had for a long time in my collection under the name *Clytus dimidiaticornis* Chev.; but, on comparing it more closely with the described characters of that species, there seems to be no doubt of its distinctness; it differs from *Clytus* in the much more prominent transverse frontal line between the antennæ and the consequently much steeper anterior part, which is perpendicular; it also differs in the broadly truncate basal margin of the eyes, stouter legs, relatively much less developed head and prothorax and in the system of elytral ornamentation, but agrees very well otherwise. The type may be described as follows:

***Clytopsis nimbata** n. sp.—Stout, only moderately convex, deep black and opaque, the elytra feebly shining; legs pale ferruginous, the femora broadly and feebly fusco-annulate near the apex; head with three bands of yellow pubescence; antennæ rather thick, two-thirds as long as the body, pale, gradually thicker, more compact and blackish-brown distally, the color transitional through the sixth and seventh joints, the basal joint obconic and as long as the next two, the second strongly obconic and as long as wide; prothorax nearly one-half wider than long, broadly rounded at the sides, narrowed and subtubulate at base, very finely, densely, confusedly punctate and evenly convex throughout, with sparse erect fuscous hairs and bright yellow apical and basal margins; scutellum large, transversely rounded, densely yellow-pubescent; elytra very much wider than the prothorax, slightly tapering, each with some longer looser yellow hairs on the basal slope and a transverse, somewhat anteriorly oblique yellow line near the base, not attaining the side or the suture near the scutellum, a transverse, posteriorly and feebly arcuate fascia a little before two-fifths, from the side bending rapidly forward internally to the suture slightly behind the scutellum, another, finer, from the side slightly behind the middle, feebly oblique and straight, then near the suture abruptly and anteriorly extended to the suture at basal third, another, broader and more transverse, just beyond two-thirds and finally an apical transverse solid spot, the apices narrowly obliquely truncate, with the angle rounded; under surface clothed closely almost throughout with rather coarse, decumbent, more whitish-yellow pubescence. Length 11.0–15.0 mm.; width 3.4–5.0 mm. Mexico (Guerrero).

This species differs from *dimidiaticornis*, so far as can be deduced

from the description, in the absence of what could be termed "long poils blond" and in the somewhat longer antennæ, which are not sharply bipartite in color as described by Chevrolat; the subbasal discal fascia does not unite at the margin with the third, and, finally, I cannot place the "point sutural jaune de chaque côté, plus rapproché de la deuxième que de la troisième bande." The solid apical yellow spot in *nimbata* is sometimes resolved into two narrow fasciæ. *Dimidiaticornis* is described from Oaxaca and is a slightly larger species than *nimbata*.

Paraclytus n. gen.

The species described by LeConte under the name *Clytus lanifer* (Sm. Misc. Coll., 264, 1873, p. 198) is isolated in all its features of structure and ornamentation, and cannot be closely associated with either of the two preceding genera, differing in the directions noted in the table given above. It is a local development, confined so far as known to California and the adjacent parts of Arizona. There seem to be three species as follows:

Antennæ (♂) slightly more than half as long as the body, black, flavo-pubescent; prothorax and base and suture of the elytra clothed with long hairs, the former slightly longer than wide, the base constricted, the sides subangularly rounded, sinuate posteriorly, densely and coarsely punctate, with a short dorsal line smooth; elytra with the suture, subbasal fascia, another transverse at the middle and a third oblique and ante-apical, flavate; scutellum densely flavo-pubescent; tibiæ and tarsi ferruginous. Length 14.0 mm. California (Owen's Valley).....**lanifer** Lec.

Antennæ (♂) two-thirds to nearly four-fifths as long as the body; prothorax seminude toward base, the smooth ragged dorsal line only present basally; size smaller though varying greatly.....2

2—Rather stout and convex, shining, black, the elytral suture, largely expanded basally and ante-apically and not attaining the apex, and an entire transverse slightly ante-median fascia, sometimes interrupted on each elytron, pale testaceous, the ante-basal parts of the prothorax and the sutural pale regions densely clothed with long flavate hairs, the transverse fascia nude; head more sparsely clothed with rather long pale hairs; antennæ (♂) infusate, black basally, not very slender, slightly thickened basally, gradually tapering distally, fully three-fourths as long as the body, the third joint longer than the first and one-half longer than the fourth, the basal joint notably stout, or (♀) rather more than half as long as the body, not tapering but flattened and more serrate distally, the joints similarly proportioned basally, except that the third is barely as long as the first; prothorax not quite as long as wide, truncate at apex and

base, similar in outline to the preceding, very coarsely and confluent punctate, the narrow interspaces polished; scutellum indistinct because of the dense vestiture but moderate and subequilatero-triangular; elytra much wider than the prothorax, about twice as long as wide, very feebly tapering, evenly rounding at apex to the suture without trace of truncature, the sutural angles rounded; surface shining, sparsely and very minutely punctulate; legs rather short and thick, dark ferruginous, the femora black, clavate distally, the posterior feebly, the anterior and middle tarsi broad, slightly broader in the male; under surface closely and uniformly clothed with short yellowish hairs; anterior coxæ well separated; fifth ventral very short, broadly sinuate (σ^7), or a little longer than fourth and rounded (φ). Length (σ^7 , φ) 8.8–13.0 mm.; width 2.7–4.0 mm. California (San Diego)..... **brevitarsis** n. sp.

Rather less stout and more elongate, similar to the preceding in structure, coloration, sculpture and vestiture, except that the antennæ (σ^7) are about two-thirds as long as the body, more thickened basally and relatively more tapering distally, with the third joint but just visibly longer than the first, which is more evenly obconic and not abruptly narrowed basally, the prothorax still more evidently shorter than wide and with the close uneven punctures very much less coarse, the elytra more elongate, with the basal expansion of the sutural pale vitta more extended laterally nearly to the side margins and with the nude ante-median transverse fascia more anteriorly arcuate on each elytron, the apices not evenly rounding to the sutural angles but narrowly sinuato-truncate, with the sutural angle rather acutely prominent; legs nearly similar, the under surface very densely and uniformly clothed throughout with pale yellow decumbent and semi-erect coarse hairs. Length (σ^7) 12.0 mm.; width 3.65 mm. California (Siskiyou Co.)..... **crucialis** n. sp.

The difference between *crucialis* and *brevitarsis* in pronotal sculpture and conformation of the elytral apices is remarkable and apparently decisive.

Microclytus Hald.

The discovery of additional material shows that *Cyrtophorus* is monotypic and represented only by the type, *verrucosus* Oliv. *Insinuans* will have to be placed in *Microclytus*, where its rugosely punctate pronotum and long antennæ, with relatively shorter second joint, isolates it thoroughly from *gazellulus* Hald., or *gibbulus* Lec.; that it is the male of *gazellulus*, as stated by Dr. Hamilton, is altogether impossible. The following is still another species:

Microclytus frosti n. sp.—More slender and convex than *gazellulus* and differing in its longer antennæ and vestiture of the elytral apex; body slender, somewhat shining, the antennæ (σ^7) extending to apical third of the elytra, slender, the second joint less than two-fifths as long

as the third, the latter extremely minutely spinulate at apex; prothorax slightly elongate, narrowed and feebly constricted at base, narrower than in *gazellulus*, very even in convexity and with a fine even strong reticulation of fine raised lines; elytra as in *gazellulus*, except that there is a more distinctly marked loosely pubescent band at a greater distance from the apex. Length (♂) 5.6 mm.; width 1.35 mm. Maine (Monmouth),—C. A. Frost.

Of *gazellulus* I have two forms, one smaller, from Illinois, and the other even larger than *insinuans*, taken by Schmitt in Pennsylvania; there seems to be very little sexual difference, except in the less basally narrowed prothorax of the assumed male and the slightly longer antennæ.

Agallissus Dalm.

The following species is evidently allied to the Honduran *quadrimaculatus* White:

Agallissus floridanus n. sp.—Rather stout, shining throughout and deep black, without trace of metallic lustre, the under surface, legs and antennæ black; elytra each with a transverse red spot at two-fifths and another just before apical fourth, both extending from the lateral margin to within inner third; head coarsely, closely punctate, longitudinally canaliculate between the antennæ, the latter (♀) stout, a little less than half as long as the body; prothorax nearly as long as wide, much wider than the head, parallel, the sides broadly arcuate, the apex very briefly, the base much more extendedly, tubulate; surface convex, rather flattened medially, very coarsely, closely, somewhat unevenly and subconfluent punctate throughout, the interspaces polished; scutellum tumid, sunken, wider than long; elytra much wider than the prothorax and more than three times as long, parallel and nearly straight at the sides, becoming somewhat laterally prominent at the tumid humeri, broadly rounding anteriorly to the narrowly and transversely arcuate apices, the surface flattened suturally, becoming declivous toward the scutellum, polished, very coarsely, closely and perforately but not contiguously cribrate throughout, each with two subprominent smooth discal lines attaining apical fourth, the punctures on the gradual apical slope less coarse; abdomen polished, with fine and sparse punctures; legs short; metepisterna wide, obliquely narrowed posteriorly, the elytral sinus near the base deep. Length 14.8 mm.; width 4.4 mm. Florida (Palm Beach).

Differs from *quadrimaculatus* in having the short erect hairs everywhere fuscous, very sparse and scarcely obvious, unless looked for, and not denser near the bases of the abdominal segments, also in the total absence of metallic reflection on the prothorax or elytra.

The genus *Agallissus* can readily be conceived to be nothing more than an aberrant Clytid.